DOCUMENT RESUME

ED 086 371 PS 007 123

AUTHOR	Emrick, John A.; And Others
TITLE	Interim Evaluation of the National Follow Through Program 1969-1971. A Technical Report.
INSTITUTION	Stanford Research Inst., Menlo Park, Calif.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
REPORT NO	SRI-URU-7370
PUB DATE	Feb 73
CONTRACT	OEC-0-8-522480-4633(100)
NOTE	416p.
EDRS PRICE	MF-$0.65 HC-$16.45
DESCRIPTORS	Academic Achievement; Achievement Tests; Affective Behavior; Cognitive Processes; *Disadvantaged Youth; Language Skills; *Longitudinal Studies; *Preschool Children; *Preschool Curriculum; *Program Evaluation
IDENTIFIERS	*Planned Variations Program; Project Follow Through; Stanford Research Institute

ABSTRACT

Results of an interim evaluation of selected aspects of the Follow Through Program are described. Analyses are described for two cohorts: children entering the program in 1969 (2 year's data) and those entering in 1970 (1 year's data). Measures on program impact on the children included achievement, quantitative skill, language arts, cognitive processes, affect, and attendance. Various measures of program impact on the parents were also taken. Overall interim results, for the most part, favor the Follow Through children. Caution is advised in interpreting results of this interim evaluation. (CS)

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ED 086371

February 1973

INTERIM EVALUATION OF THE NATIONAL FOLLOW THROUGH PROGRAM 1969-1971

A Technical Report

By: JOHN A. EMRICK, PHILIP H. SORENSEN, and MARIAN S. STEARNS
with assistance from the professional project staff

Prepared for:

BUREAU OF ELEMENTARY AND SECONDARY EDUCATION
U.S. OFFICE OF EDUCATION
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
WASHINGTON, D.C.

CONTRACT OEC-0-8-522480-4633(100)

SRI Project URU-7370

The conclusions and recommendations in this report are those of the Contractor and do not necessarily reflect the views of the U.S. Department of Health, Education, and Welfare or any other agency of government.

PS 007123

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ACKNOWLEDGMENTS

A program of the scope and complexity of Follow Through is critically dependent on the cooperative efforts of a vast number of people. We wish we could appropriately acknowledge the contributions of each such individual, but because of space limitations we cannot. We do, however, wish to acknowledge the following individuals and groups who have contributed to the Follow Through program and its evaluation.

First, we extend our sincere gratitude to the pupils and parents, whose cooperation has been vital in collection of evaluation data. Special thanks are also due to local Policy Advisory Committee members and chairmen, to Follow Through directors, and to teachers and other staff--both Follow Through and non-Follow Through--whose assistance made possible the collection of data. Moreover, the Follow Through sponsors and their staffs warrant special thanks for their cooperation and counsel.

We cannot name all the staff associated with the Follow Through program in the Office of Education who have been responsible for planning and managing Follow Through as a national program. We are grateful to Mr. Richard Fairley, Director of Compensatory Education, Ms. Rosemary Wilson, Director of Follow Through, and especially to Dr. Garry McDaniels, Chief of Research and Evaluation for Follow Through, under whose management and support this report was prepared. We also recognize and are appreciative of the contributions and assistance provided by members of Dr. McDaniels' staff in resolving the complex and manifold administrative problems encountered in this project.

Special recognition is due Dr. Robert Egbert, previous director of Follow Through (through June, 1971) and Dr. Richard Snyder, Chief of Research and Evaluation, who originally established the research potential of Follow Through.

We also wish to acknowledge the advice and assistance of technical consultants to the Follow Through evaluation staff. These consultants included Dr. Marshall Smith, Dr. Sheldon White, and Ms. Jane David of the Huron Institute, Dr. Andrew Porter of Michigan State University and Dr. Gilbert Krulee of Northwestern University.

Many persons have served as consultants to SRI throughout the period covered by this report. We are particularly grateful for the advice and assistance provided by Dr. Leon Festinger, Dr. Robert Hess, Dr. Eleanor Maccoby, and Dr. Merle Wittrock. We are particularly grateful for the advice and assistance provided by Dr. David E. Wiley regarding the statistical analysis of these interim data. Further special gratitude is extended to Dr. Ralph Hakstian, Dr. S. Jay Samuels, and Dr. James M. Royer, each of whom contributed in crucial ways to the interpretation of results and overall organization of this report.

The Follow Through evaluation project is under the administrative supervision of Mr. Harvey Dixon, Executive Director of the Urban and Social Systems Division. Dr. Philip Sorensen, Director of Education Research, and Dr. William Madow, Director of Mathematical Statistics, collaborated as project leaders until recently; Mr. Richard Marciano, Assistant Director of Education Research, serves currently as project leader.

Although the SRI Follow Through Evaluation represents the consolidated efforts of a very large professional, technical and clerical staff, certain key members assumed major responsibilities in completing the research for this report. Very special recognition and gratitude is due Dr. W. Lee Ruggles for his invaluable assistance in developing and implementing the interim data analyses. Gratitude is also expressed to Mr. Michel Rogson and his programming staff for their assistance in executing the complex data preparations and computer processing. Appreciation is extended to Dr. Jane Stallings and her staff for developing the classroom process variables, to Mr. S. Stephen Oura for developing project descriptor information, and to Mr. C. David Beers for developing the descriptions of the sponsor approaches. Finally, sincere thanks to Ms. Susan Peterson, and Ms. Dorothy Stewart for their diligent research assistance in the preparation, revisions and completion of this report, and to Ms. Trudy Hammerling for her excellent secretarial assistance.

Listed below are SRI professional staff who devoted full time, or nearly so, to the Follow Through project during all or part of the period from July 1969 through June 1971 or, if they were not part of the staff during that period, contributed to the analyses presented in this report.

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Elouise Banks, M.A.
David Beers, M.A.
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EXECUTIVE SUMMARY

The current report describes the results of an interim evaluation of selected aspects of the Follow Through program. Congress authorized Follow Through in 1967 under an amendment to the Economic Opportunity Act to provide comprehensive health, social, and educational services for poor children in primary grades who had experienced Head Start or an equivalent preschool program. The enabling legislation anticipated a large-scale service program, but appropriations did not match this vision. Accordingly, soon after its creation, Follow Through became a socio-educational experiment, employing educational innovators to act as sponsors of their own intervention programs in different school districts throughout the United States. This concept of different educational improvement models being tried in various situations was called "planned variation."

The evaluation of Follow Through is the evaluation of the effectiveness of the sponsored educational models as they are implemented in various school districts. School districts are recommended for participation by state education officials and are awarded grants by the U.S. Office of Education. School communities choose a model from among those offered by sponsors. These sponsored educational programs represent the only distinct part of the experimental treatment. Parent advisory committees and nutrition, medical, dental, and social service components must be present in every Follow Through program, but they are not specified by type. Evaluation of the Follow Through program consists primarily of determining which approaches are effective in achieving a specified set of educational objectives for children and a variety of changes in parent-school relations.

The SRI evaluation of the impact and effectiveness of Follow Through, both as an overall program and as a collection of diverse "treatments" with varying goals and emphases, has been approached at a number of levels. In part, the evaluation was designed to answer policy relevant questions, such as the following:

- Are any approaches having positive impact on children, parents, school, and community?
- Which approaches appear most effective and under what conditions?

At another level, the evaluation seeks to discover in what ways and to what extent planned variations in approaches are occurring. At still another level, the evaluation seeks to develop useful data and to advance the state of the art regarding research on large-scale, nonexperimental social intervention programs, such as Follow Through.

Design of the Evaluation

The basic design for longitudinal evaluation of Follow Through, on which this interim report is based, is summarized as follows:

(1) A set of projects that have had at least one year's experience with a sponsored Follow Through approach are sampled for participation in the national evaluation. This sampling process is based on criteria such as participation in Head Start planned variation, ethnic or minority group representation, representation of different sponsor approaches, and regional and community characteristics.

(2) For each school participating in the Follow Through experiment, a comparable school in the same district that is not receiving a Follow Through grant is recruited to serve as the non-Follow Through comparison group. A Follow Through (FT) school, or group of classrooms, operating in accordance with a sponsor's "model" and the non-Follow Through (NFT) comparison classrooms define a Follow Through project.

(3) Within each project, five categories of measurements are obtained: pupil classroom demographies; cognitive and noncognitive pupil measures; parent interviews; teacher responses to questionnaires; and project and community descriptors. An additional category of measures--classroom observation processes--are collected on a limited number of Follow Through and non-Follow Through classrooms.

(4) The original SRI evaluation plan called for collection of all major categories of measures during the beginning period for each annual group of participants--or cohort-- and at specified successive time points, generally at the end of each grade year.

Due to administrative difficulties, collection of baseline measurements for Cohort I samples was not completed until December 1969, creating serious analysis problems for evaluation of program impacts on this cohort. Cohort II measures, however, were gathered well within the intended baseline interval (second to fourth week following commencement of school). Parent interviews were to be limited to two times--once in the initial year and again at the end of Third Grade. Since the Follow Through experiment provided for four years of "treatment" for kindergarten cohorts (three years for children entering at the first grade), and since there were to be four successive cohorts, a total of 16 evaluation points existed in this plan. Subsequent modifications required reducing the size of the evaluation samples that were included in intermediate testing, although the total plan includes 16 evaluation points.

This interim report is based on a limited set of two annual cohorts--one which has progressed two years through the four- (or three-) year program (Cohort I), and one which has progressed only one year (Cohort II). In terms of the 16 cell design, this report is based on evidence from only three cells, as shown in the tabulation of school year progression of Follow Through Cohorts by grade stream, which follows:

		Experience Year in School			
Cohort	Grade Stream	First	Second	Third	Fourth
Cohort I (Enter Fall 1969)	Kindergarten	1969-70	1970-71	1971-72	1972-73
	First Grade	1969-70	1970-71	1971-72	
Cohort II (Enter Fall 1970)	Kindergarten	1970-71	1971-72	1972-73	1973-74
	First Grade	1970-71	1971-72	1972-73	
Cohort III (Enter Fall 1971)	Kindergarten	1971-72	1972-73	1973-74	1974-75
	First Grade	1971-72	1972-73	1973-74	
Cohort IV (Enter Fall 1972)	Kindergarten	1972-73	1973-74	1974-75	1975-76
	First Grade	1972-73	1973-74	1974-75	

☐ Periods and groups covered by analyses in this report.

The evidence of program impact was developed from systematic organization of baseline measurements (taken at entrance to the program) and progress measurements (taken at the end of each school year) into outcome, process, and control variables. Three classes of outcome measures or evaluation foci were generated: child, parent, and teacher.

Measures of program impacts on children were:

(1) Total achievement--the raw score sum of all correct responses on all cognitive test items.

(2) WRAT achievement--the raw score sum of correct responses to the Wide Range Achievement Test.

(3) Quantitative skills--the raw score sum of correct responses to items pertaining to quantitative concepts--such as numeration, operations (addition, subtraction, etc.), and word problems.

(4) Reading skills--the raw score sum of correct responses to items requiring reading or reading-related skills (including pre-reading). Such skills as alphabet/letter recognition, matching and copying, figure copying, word matching, symbol matching, and oddity discrimination.

(5) Language Arts--the raw score sum of correct responses to items requiring language, lexicographic, or grammatical skills such as analogies, word meaning, spelling, and concept activation.

(6) Cognitive Processes--a residual category consisting of the raw score sum of correct responses to items requiring perceptual motor skills and concept identifications.

(7) Affect--the scaled sum of the child's answers to questions about how he felt toward school, learning, himself, friends, etc.

(8) Attendance--the number of days absent reported for the preceding school year.

Measures of program impacts on parents were:

(1) Parent/child interactions--the extent to which parents report that they actively interact with their children in such activities as talking with their children, taking their children on trips, helping their children with school work, reading to them, accepting assistance from them, and acknowledging their progress in school.

(2) Parent/school involvement--the extent to which parents report that they are actively participating in various school-related activities, such as classroom visits, volunteer assistance, parent/school meetings, and external contacts with school personnel.

(3) Child-academic expectation--the extent to which the parent reports satisfaction with child's progress and optimism regarding the child's future, both academic and nonacademic (e.g., what are the child's expected grades, chances of getting a good job, chances of going on to college?).

(4) Sense of control--the extent to which the parent reports a sense of concern and control over school procedures, educational reforms, and school awareness of and responsiveness to parent and community desires and needs.

Measures of teacher level program impacts were:

(1) Parent-educator image--the extent to which teachers reported they felt it essential to "get together with parents outside of the classroom" for purposes of

- Improving children's learning
- Improving classroom teaching
- Learning parents' views on teaching
- Improving school services to parents
- Improving school services to children
- Improving school services to community
- Parental understanding of school program.

(2) Professional acceptance of method--the extent to which the teacher reports she would not prefer to adopt some teaching approach other than the one she is currently using.

Data obtained from classroom observation procedures were organized and factor analyzed, yielding the following five classroom process scales:

(1) Self-regulatory--the extent to which children work independently on activities not strictly academic

(2) Child-initiated interactions--the extent to which children initiate interactions and receive positive or negative feedback from adults.

(3) Programmed academic--the extent to which adults teach small groups of children by highly structured question-response-reinforcement interactions.

(4) Expressive--the extent to which positive and negative affect was expressed by both children and adults.

(5) Child self-learning--the extent to which children work alone with books or seat-work materials.

Hypotheses regarding program impacts on each of these evaluation foci were formulated at several levels: overall and by individual approaches in terms of duration of treatment (one year or two years) and in terms of successive cohort experiences (C-I or C-II). Classrooms defined the units of analysis for assessment of effects and hypotheses tests, and classroom scores were composed of the scores of only those pupils for whom both pre- and post-measurement data were available. Parent data from classroom grouped pupils were similarly grouped. Where necessary, certain missing values were imputed from school and project means.

Four basic analysis groups were created, corresponding to cohorts and entrance points within cohorts. These groups are Cohort I-K (kindergarteners entering FT in Fall, 1969), Cohort I-EF (first graders, in schools without kindergarten, entering FT in Fall, 1969), Cohort II-K (kindergarteners entering FT in Fall, 1970), and Cohort II-EF (first graders in schools without kindergarten entering FT in Fall, 1970). Cohort I data were further organized into one-year effects (1969-1970) and two-year effects (1969-1971) subsets.

The basic statistical procedure for analysis of program effects was fixed effects one-way analysis of covariance (ANCOVA), with planned variations defining the treatment variable. Separate but parallel ANCOVAS were performed on project level and sponsor level treatment groupings. These analyses were conducted separately on each data grouping (cohort and grade stream) and for each set of outcomes (pupil, parent, and teacher). Individual project results were obtained by means of planned comparisons (linear contrasts) of corresponding FT with NFT subgroups.

Summary of Significant Program Impacts

Significant FT-favoring results of the analyses conducted on these interim data are summarized separately for each sponsor. That is, in this summary, only the significant ($p < .05$) results in favor of the Follow Through group are reported. The complete results, as presented in the text, are far too complex and extensive to report adequately in this summary. We have concentrated on presenting FT-favoring findings because we assumed they would be of principal interest.

The results of pupil outcomes are reported separately for the analysis of two-year and one-year data. Since parent impacts are measured during the first year of the child's participation in the program and since teacher impacts are the results of the most recent teacher survey, these results are not summarized separately by cohorts.

The Far West Model (FW): The Responsive Educational Program

Seven project samples were included in the analysis of interim effects for the Far West Laboratory approach. Analyses of two-year data show significant FT-favoring pupil differences on the quantitative skills measure; analyses of one-year data show FT-favoring pupil differences on the cognitive processes measure. Significant parent impacts were noted on the parent/child and parent/school interaction measures. No significant FT-favoring teacher impacts were noted.

The University of Arizona Model (UA): The Tucson Early Education Model

Five project samples were included in the analyses of interim effects for the University of Arizona approach. Analyses of one-year data show FT-favoring pupil differences on the affect measure only. Significant parent impacts were noted on the parent/school involvement measure, and significant teacher impacts were noted on the acceptance of method measure.

Bank Street Model (BC): The Bank Street College of Education Approach

Seven project samples were included in the analyses of interim effects for the Bank Street approach. Analyses of two-year data show significant FT-favoring pupil differences on the quantitative skills and cognitive processes measure. Analyses of one-year data show FT-favoring pupil differences on overall achievement, on the WRAT measure, and on the reading and language/arts subscores. Significant parent impacts were noted on the parent/child interaction measure, and significant teacher impacts were noted on the acceptance of method measure.

The University of Georgia (UG): The Mathemagenic Activities Program

A single project sample for the University of Georgia was included in the analyses. No FT-favoring significant differences were noted on outcome measures, but since this project was in its initial implementation year (first year of affiliation) with the model, no evaluation conclusions are appropriate.

The University of Oregon Model (UO): The University of Oregon Engelmann/Becker Model for Direct Instruction

Seven project samples were included in the analysis of interim effects of the University of Oregon approach. Analyses of two-year data show significant FT-favoring pupil differences on the attendance measure. Significant one-year effects were noted on the overall achievement measure, attendance measure, and the WRAT measure. Significant parent impacts were noted on the parent/child interaction measure, and significant teacher impacts were noted on the acceptance measure. Substantial analysis problems were encountered with these project data due to non-equivalence of treatment and comparison groups.

The University of Kansas (UK): The Behavior Analysis Approach

Three projects were included for analyses of interim effects from the University of Kansas approach. Analyses of one-year data show significant FT-favoring pupil differences on the achievement and WRAT measures and on the quantitative and reading skills measures. No other FT-favoring differences reach significance for this model. Substantial analysis problems were encountered with these project data due to non-equivalence of treatment and comparison groups.

High/Scope (HS): The Cognitively Oriented Curriculum Model

A total of three project samples were included in the analyses of interim effects for this model. Analyses of two-year data show significant FT-favoring pupil differences on affect and attendance. Analyses of one-year data show FT-favoring differences on affect only. Significant parent impacts were noted in the parent/child, parent/school, and parent expectation measures. No significant FT-favoring teacher impacts were noted. Substantial analysis problems were encountered with these project data due to non-equivalence of treatment and comparison groups.

University of Florida (UF): The Florida Parent Education Model

Five project samples were included in the interim evaluation of the University of Florida approach. Analyses of the two-year data show significant FT-favoring pupil differences only on attendance. Analyses of one-year data show FT-favoring pupil differences on the achievement measure, the WRAT measures, the affect measure, the quantitative skills measure, the reading skills measure, and the language arts measure. Significant parent impacts were noted on the parent/school interaction measure, and significant teacher impacts were noted on the acceptance of method measure.

The EDC Model (ED): The EDC Open Education Program

Four project samples were included in the interim evaluation of the EDC model. Analyses of two-year data show significant FT-favoring pupil differences on the quantitative skills measure. Analyses of one-year data show significant FT-favoring pupil differences on attendance and on cognitive processes. Significant parent impacts were noted on the parent/school involvement measure, and significant teacher impacts were noted on the parent image measure.

The NYU Model (NY): The Interdependent Learning Model

Three project samples were included in the interim evaluation of the NYU model. Analyses of two-year data show significant FT-favoring pupil differences on attendance and on the quantitative skills measure. Significant FT-favoring one-year effects failed to occur. Significant teacher impacts were noted on the acceptance of method. Significant parent impacts failed to occur in these projects.

The Southwest Educational Development Model (SW): Language Development (Bilingual) Approach

A single project was included in the evaluation of the Southwest model. Analyses of the two-year data showed significant FT-favoring pupil differences on the achievement measures, on the quantitative skills measure, and on the reading skills measure. Significant parent or teacher impacts failed to occur, although parents were significantly more satisfied with their child's progress.

Self-sponsored Models

In addition to sponsored projects, there are six projects from the early group of pilots preceding the planned variation phase of Follow Through who elected to remain unsponsored (the only projects included in this interim evaluation which exercised this option). They are classified as self-sponsored or parent-implemented and have instituted programs they themselves have developed. Analyses of two-year data show FT-favoring pupil differences on the achievement and WRAT measures, on attendance, on quantitative skills, and on reading skills. Significant one-year effects were observed on affect, on achievement, on quantitative skills, and on language arts. Significant parent impacts were noted on the parent/child interaction patterns and on parent/school involvement. Significant teacher impacts were noted on the acceptance of method measure.

Again, the reader is cautioned that the above paragraphs summarize only the significant FT-favoring results. A more complete presentation of findings and their interpretations can be found in the text of this report.

Process Indicators of Follow Through Treatments

The five classroom process scales (factor scores) were qualitatively analyzed in conjunction with project impact data. These analyses tended to show (a) FT classroom activities do tend to correspond with sponsor emphases, (b) clear distinctions between FT and NFT classroom activities occur, and (c) patterns of activities (factor score profiles) are reasonably consistent among projects employing the same models. These interpretations, however, are based only on qualitative analyses of process score profiles.

More detailed and rigorous analyses conducted on the discrete variables generated from the observation instruments displayed reliable overall FT/NFT differences primarily on components related to the presence of several adults in the classroom. This result is important, since a favorable adult/child ratio is a necessary condition for the implementation of many critical features of the planned variations (or critical components of the treatments). Additional analyses showed, to some extent, predictable rank ordering of the planned variations on many of the discrete observation variables.

This evidence, taken together, suggests the following interpretations:

(1) Sponsored approaches do differ discernibly from one another on many process variables.

(2) Processes characteristic of various Follow Through approaches predictably depart from characteristics observed in non-Follow Through classrooms on many process variables.

(3) Analysis of factor scores and of discrete variable scores presents strong evidence of instructional activities and components that correspond well with descriptions of intended approaches, thus validating in part the concept of planned variations in FT treatments.

Overall Results

Overall interim results were analyzed both in terms of average project results by grade stream within cohort and in terms of percentage and frequency of FT-favoring outcomes in relation to the quality of comparison group match. Average project results are slightly in favor of Follow-Through for Cohort I-K, two-year pupil outcomes, and comparison of one- and two-year results show two-year effects as systematically greater. Cohort I-EF on the other hand, displays a slight NFT-favoring trend on the two-year pupil outcomes, and comparison of one- and two-year results shows second year deficits for FT. Cohort II average effects all tend to favor Follow Through, although the differences are greater for the entering first grade group than for the kindergarten group.

With the exception of the child academic expectation and parent image measures results on parent and teacher measures tended to show positive FT impacts regardless of cohort. The image and expectation measures tended to indicate negative impacts. Further investigation is needed to uncover reasons for these reversals.

Analyses of the frequency and proportion of FT-favoring results in relation to the quality of the FT/NFT baseline match (good, moderate, or poor, based on seven pupil/parent indicators) show a strong relationship of outcomes to quality of match, particularly for Cohort-I data. Where FT and NFT were well matched, results tend to show FT-favoring results. Where the samples were poorly matched, results were generally NFT-favoring (primarily because the initial mismatch is strongly biased against the FT group). Further, comparison of Cohort I results with Cohort II shows program impact as systematically strong for the latter, suggesting a program maturation or improved implementation effect.

When these interim results were reviewed within the perspective of the overall evaluation design, the likelihood of obtaining FT-favoring pupil, parent, or teacher results appears to be associated with several rather crucial evaluation parameters. In particular, the magnitude and frequency of FT-favoring pupil results appears related to:

- The relative comparability of families in the FT and NFT samples within a project (quality of match). That is, as the quality of the match improves, the frequency and proportion of FT-favoring results also tend to improve. That bad matches tended to yield NFT-favoring results is primarily because the initial biases were extreme in favor of NFT, often suggesting that two separate populations were being compared.

- The severity of impoverishment and disadvantagement relative to the main-stream social structure. Projects in the most impoverished communities showed some of the most dramatic gains, but these were sometimes statistically unreliable and often confounded with comparison group problems. This trend may indicate the presence of a type of floor effect, but more likely it is associated with major differences in the social complexities of rural and urban communities.

- The amount of time the sponsor has had to refine and improve implementation of his treatment. In general, first-year impacts for 1970 samples (C-II) were stronger than for 1969 samples (C-I). Although this trend is confounded by certain measurement difficulties associated with the first-year, Cohort I data, the differences appear large enough to support our interpretation.

- The grade level of the pupils and the amount of time they spent in the program. This interpretation is suggested by the fairly regular cumulative trend observed for the Cohort I-K samples (second-year effects were almost always stronger than first-year effects). Also, the effects on Cohort II-EF samples (pupils in the first grade) tended to be larger than those on Cohort II-K samples. These trends do not obtain for Cohort I-EF samples probably because the proportion of "good" matches in these samples was very low (i.e., 14 percent for Cohort I-E versus 50 percent for Cohort I-K).

When the four trends evident at this interim point are combined, it appears that Follow Through has most often been successful in projects located in truly disadvantaged communities when there has been enough time to implement the model properly. In addition, the effects appear cumulative, and impacts appear stronger at higher age levels.

Some Caveats

We wish to underscore the need for caution in generalizing the interpretations of the results we have detected to date. Some major reasons for this caution are as follows:

- The samples on which these interim results are based are small, certainly too small to allow us to isolate approaches that "work" and approaches that do not. We can conclude that some changes are taking place, but we do not yet know precisely what they are or why they are occurring. At a more general level, the parent, teacher, classroom observation, and community data indicate that Follow Through is succeeding in measurably altering adult attitudes and behaviors in the home, the school, and the community. Evidence that these changes in adults are having impact on the children is less marked and more variable, but results tend to indicate positive effects on FT pupils. It is likely that in future analyses on larger and more representative samples, evidence of program impacts on pupil attitudes and achievements will be considerably more marked.

- In addition to the limitations imposed by the relatively small interim evaluation samples, we encountered complex problems of missing data. These resulted from high attrition and, particularly for Cohort I, inadequate baseline data. The magnitude of these problems was greater than originally anticipated because of the unprecedented nature and scope of this research program. And, although we now know how to cope with them, they restrict our ability to generalize about findings for Cohort I samples, and to a lesser extent about findings for Cohort II samples.

- Since Follow Through is a quasi-experiment, the allocation of treatments to projects and the allocation of units to treatment or control conditions within projects were nonrandom. One consequence of this nonrandomness was that biases were introduced into the design. The bias associated with the allocation of treatments to projects may not be very serious. But the nonrandomness within projects (i.e., systematic differences between FT and NFT samples) occasionally has serious consequences. For example, in some projects, treatment and comparison groups were very different. Although such differences are bound to occur in quasi-experiments for which control groups are assembled post hoc, they present serious obstacles to the interpretation of outcomes. And where comparison group biases are severe, we suspect they invalidate the results of analyses for the projects affected.

- These problems (missing data, differences between comparison and treatment groups, and too few classrooms per project) combine to produce relatively low statistical power in our analyses for effects. To some extent this outcome was expected, since the U.S. Office of Education made a conscious decision to concentrate data collection efforts at the entry grade (K or EF) and at the exit grade (3) and to devote less effort at the intermediate grades.

Nevertheless, we are quite likely failing to detect many important program impacts at this interim point.

- As suggested above, a substantial number of program impacts are evident in our analyses of interim data. Furthermore, we believe that the true magnitude of the effects is probably somewhat greater than detected by our analyses. But it is important to recognize that even if the number of significant effects were strikingly greater, we would still have difficulty interpreting how or why such results occurred because, at present, our current knowledge of the treatment is confined almost exclusively to the sponsors' descriptions of them. We do have evidence from limited subsamples on some of the characteristics of some processes. This qualitative evidence indicates that classroom processes conform to these treatment descriptions. To interpret how and why results occur, we now need clear operational statements of what a sponsor does when he is installing and maintaining a project and how he does it.
- Finally, because of the complexity and variety of the intervention approaches, or treatments, in the FT experiments, it is very likely that many of the evaluation measures used were not uniformly appropriate, sensitive, or relevant to varied objectives. Many program objectives were probably overlooked in our assessments. The technology for evaluating large scale social programs is in its infancy. We believe that we have contributed substantially to the advancement of this technology through our successful and unsuccessful experiences with evaluation instruments and procedures. Yet there remains much more to be learned.

Section I

INTRODUCTION

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As originally authorized in the Economic Opportunity Act amendments of 1967 (P.L. 90-22, Section 222), Follow Through (FT) was a program of comprehensive services--including dental, medical, and nutritional services; an instructional program; and psychological counseling, all with parental and community participation--for disadvantaged children in the primary grades of schools throughout the nation. As part of the war on poverty, Follow Through was conceived as an extension of Head Start when that preschool program, by itself, did not seem to promote enduring developmental gains (Wolff and Stein, 1966). In contrast to the notion that intervention programs should begin with still younger children (a notion that led to the development of the Parent Child Centers), Follow Through was based on the assumption that a sustained, multifaceted intervention that demands participation from the parents and community as well as the child, throughout the child's primary years, would contribute most to breaking the "cycle of poverty."

Underlying all of the complementary programs (i.e., Parent Child Center, Head Start, Follow Through, and other poverty and compensatory education programs) were some major theoretical shifts in view toward social services. One was the change from viewing poor persons and minority persons as inferior individuals responsible for their own position to viewing them as victims of a system and blaming environmental factors, the subculture, or the societal institutions for failing to provide equal opportunities for success. Giving poor communities and minority groups more real power to control their own environment (by changing institutions such as the elementary school, the welfare departments, and the medical profession) rather than giving direct charity to individuals was optimistically viewed as the solution to many social problems. While the Head Start and Follow Through programs still represent somewhat ambiguous views toward the poor and minorities,[*] the pervading philosophy does differ from old modes of social service and is aimed at preventing, rather than remediating, social and economic problems.

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[*] See Hess' article (1969) on four different explanatory models for lower intellectual attainment by low-income and minority groups. See also S. Baratz and J. Baratz (1970) in which the authors argue that social scientists have merely changed from blaming the children's inferior inheritance for their intellectual performance to blaming the children's inferior cultural milieu.

A second theoretical notion on which high expectations were based was that regarding the great plasticity and responsiveness to environmental stimulation of the human intellect in the early years of life (Hunt, 1961; Bloom, 1964). While this "critical period" hypothesis was no longer held in its strong form after a few years of experience with the Head Start and other preschool programs, there was still reason to believe (e.g., the studies of Skeels, 1966) that a sustained, enriched environment would bring lasting advantages--would allow children to obtain the basic skills and motivation needed to learn, to succeed in school, and then to obtain satisfying productive employment as adults and raise a new generation outside of the poverty mold.

Follow Through as an Experiment

Before the Follow Through program could be launched on a scale comparable to the Head Start program, which has now reached over 5 million preschoolers, events occurred that radically changed its form and its raison d'etre. Much less money was appropriated than was expected. It was decided to use the period until more funds were made available to learn more about compensatory education by conceiving of Follow Through as a research and development effort. The U.S. Office of Education (USOE) sought advice from the research community and found a number of educators willing to try out their methods or programs on a larger scale in actual school situations.

Eventually the program, still funded at levels substantially below original expectations, was changed into an experiment for purposes of social policy guidance.

> The Office of Education, which administers Follow Through, prepared a menu of project-types from which applicants would select the one most suitable to their circumstances, and an evaluation plan that would use common measures to assess all projects (Timpane, 1970, p. 557).

Individual decisions too numerous to mention were involved in the evolution of the final set of goals and evaluation plan imposed on the Follow Through program. But several historical trends underlay the decisions to shape the Follow Through program into a kind of large-scale social experiment. Most important among such trends were the following:

(1) Disillusion with present understanding of social problems and their cures made it imperative to find out more before investing heavily.

(2) Growing pressure for public accountability and knowledgeable program planning and policy-making in the government, as evidenced by the installation of Program Planning Budgeting System (PPBS) in government departments and by Congressional mandates (e.g., Title I of ESEA 1965, Section 402 of the Civil Rights Act of 1964), demanded that programs be evaluated.

(3) Earlier piecemeal evaluations of educational changes (documented by Hawkridge et al., 1968, and Averch et al., 1971) and Head Start programs, where information on success or failure of individual centers was often confounded with the center's location, yielded no policy-relevant information and, thus, indicated that more comprehensive research was necessary.

(4) Large-scale evaluations of program effectiveness and suggestions for such other new concepts as experimental schools were being advanced by influential commissions and study groups (e.g., President's Science Advisory Committee, _Progress Report of the Panel of Educational Research and Development_, 1964).

(5) The growing realization in Congress and among the public (Committee for Economic Development, 1968) that directly applying great amounts of money (e.g., in Title I and Head Start) was not alleviating social and educational problems; the wisdom of allocating funds for another comprehensive proverty program without further knowledge was thus made questionable.

(6) Finally, several discernibly different and promising early education programs developed with government and foundation support were available and ready for widespread field testing.

Although remaining a social experiment, Follow Through inevitably became oriented more toward education than community action, since responsibility for the program was delegated to the U.S. Office of Education by the Office of Economic Opportunity and since the social services included in the program were coordinated through the framework of the public school system.

By the 1967-68 School Year, when USOE funded 45 planning or pilot programs, the notion had already developed that Follow Through should be recast as a research and development program to refine methods of delivering educational and supporting services to young children. Then, by the

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1968-69 School Year, the guidelines developed by the Office of Education came to emphasize national evaluation and specified a "planned variation" approach, under which a number of different early childhood instructional programs would be implemented, each in a number of communities throughout the United States. Individuals and educational organizations involved in research and development on educational curricula were identified and were asked to present their instructional approaches to members of communities receiving Follow Through grants. The individuals and educational organizations were designated "program sponsors." Their intervention approaches were called "models."

Communities receiving Follow Through grants were obliged to choose one of the available sponsors' models.* A sponsor and a school district contracted to work together to implement the instructional or parent education approach and to integrate it with other supporting services as part of their comprehensive Follow Through program. Variations in the educational components of the Follow Through program were "planned" variations only insofar as there was a limited number of sponsors to choose from--14 originally and 22 at present. The objectives of the evaluation changed along with the conception of the Follow Through program and eventuated in policy guidance objectives.

Follow Through as Policy Research

As a social experiment for policy guidance, the Follow Through program built on the evaluation efforts of the recent past and managed to set precedents for social experiments to follow. Continued funding for Follow Through as an experiment and for the evaluation effort indicated a willingness on the part of legislators and administrators to defer judgment before proceeding to fund massive social action programs, since the effects of such programs cannot be accurately predicted. Although tremendous pressures remain to use resources for spreading services to all who have need and for satisfying the demands of certain constituencies, there is at least a recognition that it may be wiser to test the efficacy of programs aimed at mass behavioral change before applying them generally.

Follow Through, although a compromise between service and experimental purposes, is far less confused than the "action research" projects of the late 1950s and early 1960s (e.g., Mobilization for Youth, the Ford Foundation's "Grey Areas" project) in which researchers and program directors were often the same people. In these early projects, formative and summative functions for research were not distinguished, and conflicts between service and research regarding changes in program goals were resolved in favor of providing more service. These confusions permitted few reliable findings about projects and allowed no generalizations about program success in various settings.

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*Communities that had pilot projects in 1967-68 were allowed the choice of remaining self-sponsored, since they had a year of program development on their own.

The FT experiment makes it theoretically possible to make discoveries not permitted by a survey of status design, such as the Equal Educational Opportunity Survey (Coleman et al., 1966). The Coleman Report did not evaluate a particular program, but it has been recognized as having advanced the state of the art of policy-relevant research. It not only measured the available school resources, or 'inputs' to the educational institutions, thought to be important to equality of opportunity but also, for the first time, surveyed the outputs of the schools--the performance of the students. The relationships discovered from these outputs were startling:

- Schools are remarkably similar in the way they relate to the achievement of their pupils when socio-economic factors bear a strong relation to academic achievement. When socio-economic factors are statistically controlled, however, it appears that differences between schools account for only a small fraction of differences in pupil achievement (Coleman et al., 1966, p. 21).
- School facilities for children of different races were not especially unequal, and where differences did exist they were not necessarily in the presumed direction. In any event, it did not appear that school facilities had any great influence on educational achievement, which seemed mostly to derive from the family background of the child and the social class of his schoolmates (Moynihan, 1969).

From the Coleman survey, however, we are neither able to estimate our confidence in causal inferences nor to obtain information about the effect of school programs on children over a period of time.

Since Follow Through is an intervention program, the evaluation need not be simply a status survey but can be designed to assess changes in school programs; e.g., using a longitudinal evaluation design, it is possible to take measurements before, during, and after several waves of children experience the program.

The Westinghouse/Ohio University study of Head Start (Cicerelli et al., 1969), like the Coleman study, involved sampling on a national scale to take into account regional variations and, in addition, was an evaluation of a program of intervention. It was a bold attempt to assess the overall impact of the Head Start program on the achievement and attitudes of the participating children. Because of the time schedule on which it was conducted, a post hoc evaluation design was employed. Insofar as possible, subjects with an without the special intervention had to be "equated" on entering abilities at the one final measurement point. Inferences about effects of the program over time had to be made on the basis of groups of children who had entered Head Start in different years.*

The Westinghouse study revealed some relatively small (rarely statistically significant) differences between Head Start and control groups on the attitude and achievement tests. However, its design did not permit much further inquiry into explanations for this main finding; it especially did not provide clues for program improvement. In terms of policy, at best it might have aided decisions of the "go/no-go" type but could not provide guidance regarding how programs might be improved.

The "planned variations" design for evaluating the Follow Through and the Head Start programs originated partly in response to the absence in earlier evaluations of information on the differential effectiveness of various educational approaches. Ideally, under this design, systematically different strategies can be tested and compared so that more and less effective techniques can be cited for attaining various goals in subgroups with varying characteristics. When the "planned variations" idea was combined with the notion of measurement at several points in time (before, during, and after primary school), on several successive waves of children, in the several special programs as well as in comparison school programs, the evaluation design, in conception, began to take on the aspects of an experiment.

Thus, when understood in terms of its potential advancement over past efforts, the concept of the Follow Through experiment is quite sophisticated. As actualized, it demonstrates that the state of the art of implementing and evaluating large-scale social action programs is just being developed.

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*It is important to understand that unlike Follow Through, the Head Start program is for the most part a one-summer or one-year experience so that measurement in the Westinghouse/Ohio study occurred for some children as long as 2 years after the end of the intervention period, rather than during the intervention period.

Stakeholder Interests in the Evaluation

The lack of elegance in the FT evaluation design is perfectly understandable when the demands that circumstances made on the evaluation are considered. There is, first, the enormous scope and even contradiction among the goals held for the Follow Through program by people at many different levels. The goals range from long-term, abstract, social goals, such as reducing poverty and racial discrimination, to immediate, concrete, and specific goals, such as improving the ability of a child to express himself verbally. The pressure for evaluative information regarding attainment of each of the objectives is great. Each is important to a group of people on whom the program depends for its existence.

Members of Congress and administrators in the Executive Office of the President want to know if the Follow Through program overall enhances the "life chances of children" or makes poverty families more "self-sufficient."* Their decisions on continued support for the comprehensive services and on allocation of funds seem to require information about average per pupil costs, general participant satisfaction, and benefits derived by children and their families participating in programs supported under the Follow Through authorization. Such information is needed yearly, because appropriations for the Economic Opportunity Act are authorized annually. These stakeholders will find this document of some use.

State and Federal administrators want to know which educational programs work best with disadvantaged children and can be implemented in a variety of settings. Both also want to know the comparative costs of the programs. While the two groups may vie over the authority to determine allocations and to make the decisions, they both want the information as soon as possible to select programs that "work." A recent Federal-State "5-year plan" for disseminating the most promising Follow Through program models to local education agencies increases the pressure for information on the effectiveness of "ready-made" program alternatives. It is policymakers at the State and Federal levels to whom this report is primarily directed.

Local education officials and local service agencies have goals in mind that dictate different foci for evaluation. They want to know which program will work for their particular population of children and how to implement it. Those local people actually involved in implementing Follow Through models in communities throughout the country have still other concerns. Evaluation for their own formative purposes might be appreciated, but this is rarely offered. Delayed summative assessment of their progress would more likely reflect the effects of satisfactorily implemented programs and thus would be desired over immediate assessment by Federally sponsored evaluators. Since the data in the present volume are analyzed in a manner appropriate to the broader policy questions, the local policy-maker likely will find that the present report does not serve his purposes.

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*These goals are stated in the Economic Opportunity Act.

The goals of the teachers in the Follow Through classrooms and parents of participating children are more specific to their particular groups of children and even to individual children. An evaluation designed to answer some of their questions would be entirely different from an evaluation aimed at broader policy questions.

Finally, sponsors who are working to implement their ideas in the natural laboratory of the public school have somewhat different objectives. They have several entirely different theories of education and very different notions about the appropriate agents of intervention and their roles (parents making curriculum decisions, teachers becoming experimenters or technicians, teachers becoming staff planners, parents reinforcing school objectives). Most are also interested in experimentation as a way of testing hypotheses about intervention techniques and about children's learning from which better education theory could be built. Many are themselves engaged in formative evaluation as an aid in refining their methods. Some would like analysis and documentation of implementation procedures, descriptions of problems involved in working simultaneously with a school district, a group of parents, Federal program officers, and their own staffs to get a Follow Through program to children in school. Unfortunately, none of these purposes is well served by the present policy study.

The concept of the evaluation as assessing alternatives may seem straightforward, but it obscures fundamental value differences that separate those with various interests in Follow Through. These basic differences reside in the question that is implied, but not answered, by the assertion that Follow Through is a comparative study of alternative approaches; the unasked and unanswered question is "approach to what?" Some feel that Follow Through should be used as a vehicle by which the educational system itself may be changed in basic ways to be more adaptable to the diverse needs and desires of the children it serves and the adults who comprise its political constituency. A more common view is that the fundamental purpose of an educational system, including Follow Through, is to bring about desirable changes in people.

Although these two views are not necessarily incompatible, they imply that different kinds of criteria be used to judge the effectiveness of the program. For example, if one holds that the essential purpose of Follow Through is to change the system, then the indicators of program success that are given most weight will be ones that attend to the behavior and beliefs of parents vis-a-vis the school and the actions and attitudes of administrators and teachers who are charged with the school's operation. On the other hand, for those who view the school as an institution to bring about desired changes in children, the criteria of effectiveness or program success will center primarily on the changes that children display. This simplistic distinction still overlooks additional important considerations about when changes might realistically be expected and what constitute "desirable changes" in children. Changes may range from growing effectiveness in the use of such cognitive tools as reading and mastery of quantitative concepts to growth in psychological and social dimensions such as increased self-esteem, self-confidence, or social sensitivity.

Although it is clear that the general purpose of the evaluation of Follow Through is to assess the effectiveness of alternative approaches, there is far from unanimity of opinion regarding the particular goals that the approaches should seek. Thus, a fundamental issue in the evaluation design has been from the outset how to accommodate to the multiplicity of criteria by which program effectiveness is judged. The decision to select a fairly broad set of measurable behaviors against which to measure every program makes it possible to compare programs on that set of behaviors. What is relinquished is the ability to determine, for each sponsored model, if it accomplished its own aims.

Unrealistic expectations (e.g., measurable changes in "self-sufficiency" of poverty families attributable to short-term participation in a school-based Follow Through program), contradictory expectations (e.g., immediate feedback versus summative pre-post Follow Through evaluation), and changing expectations (e.g., finding improved ways of educating disadvantaged children versus finding out if Follow Through, on the average, improves disadvantaged children's education) for the program made the selection of the most appropriate objectives for the evaluation problematic.

Problems of Design

Besides the problem of priorities posed to evaluation design by disparate goals, there is the paucity of measurement technology in the entire area of social action evaluation. The underdeveloped state of measures of personal growth and development in children is already well documented. Even less well explored are techniques for obtaining information on the extent or quality of program implementation, institutional responsiveness, or community change. Certainly techniques for measuring educational product and social cost/benefit analyses are still totally inadequate. Finally, the purely logistical demands of an evaluation of a program the size of Follow Through are prodigious.

The quasi-experimental form the evaluation design has assumed results from administrative decisions made in implementing the FT program. Some of these practical constraints have been mentioned already. Each of 160 school districts in various regions of the country has its unique group of community officials, parents, school principals, and teachers who coordinate the services and work with the chosen sponsor in a unique way. While continual modification is necessary in each setting to ensure that the best possible practices are implemented, it makes description of the experimental "treatment" to be evaluated very difficult.

School districts are recommended for participation by state education officials and are awarded grants by the U.S. Office of Education on the basis of political and administrative criteria unrelated to evaluation. School communities naturally choose a model from among those offered by sponsors for reasons of their own, without regard to experimental design. These sponsored programs, which represent the only distinct part of the Follow Through "treatment" (since nutrition, medical, and other service components must be present in every program but are not otherwise specified by type), differ from one another in an unsystematic manner.

Thus, it was clear by the time the evaluation began that the possibility of randomization in the assignment of students, teachers, classrooms, schools, or projects was superseded by administrative decisions. Data collection procedures could follow planned schedules, but no experimental control over the specification and scheduling of experimental "treatments" was possible; that is, treatments were defined by persons other than the experimenters, self-selection of treatments occurred, and conditions of experimental independence were often violated. In addition, intensive efforts made to involve those families "most in need" posed a problem for the composition of adequate comparison groups.

Evaluation of the Planned Variations

The innovative "planned variations" idea is the unique aspect of the FT experiment and the key to understanding the plan for assessment. The fundamental purpose of the Follow Through experiment is to find educational strategies that might be used to improve the effectiveness of the American primary schools for disadvantaged children. Thus we have evaluations of alternative early education models that differ from one another and from the alternative offered by the primary grades of the present school systems.

Each sponsor has designed a program of education or intervention for disadvantaged children or a way of changing the "significant others" in their environments.* Each sponsor has somewhat different immediate and intermediate objectives and different theories about child development, educational disadvantages, and education in general. Each also has different methods of implementing the program that he believes will enhance the school performance and presumably the "life chances" of poor or disadvantaged children. The Follow Through evaluation provides the opportunity for assessing these approaches only against a single set of criteria.

Evaluation of the national FT program then consists primarily of determining which approaches are effective in achieving a specified set of developmental or educational objectives for children and a variety of changes in parent-community-school relations.

The specified set of objectives for children are the primary criteria for the evaluation of effectiveness. But the evaluation also gives consideration to elements in the children's environment that influence development--family, neighborhood, and community setting as well as the school. Although the Follow Through program was initiated with the purpose of increasing the "life chances" of the children, it is only possible to evaluate performance on objectives presumed to be intermediate to that final goal. Objectives on which the sponsored educational alternatives can be compared are, broadly speaking, those that are held for all children at the end of the third grade. These are that children (1) be excited about learning, (2) feel good about themselves and their own competence, and (3) have mastered basic reading, language, and arithmetic skills that will help them to proceed successfully in the rest of their school experience.

The Follow Through evaluation lends itself primarily to policy decisions that deal with selecting nationally robust models for improving existing instructional programs for disadvantaged children. Federal education officials will presumably determine the most appropriate educational models to offer in their compensatory education programs. Thus, administrators eagerly await information about which educational models raise achievement of disadvantaged youngsters in academic skills areas and which educational models create positive attitudes toward school on the part of poor parents and their children. The results of the evaluation will be pertinent to such decisions when data from a large enough sample of children who have completed the educational programs associated with the several sponsors become available.

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*The programs of some sponsors are not directly concerned with instruction of children, but attempt to change school and community interactions.

Since it is possible that sponsored programs will not be equally effective in all situations (ranging from inner-city ghetto to rural Appalachia, from highly unionized to nonorganized teaching staffs), it will be important to establish evidence of relative effectiveness of programs on a project by project basis. An evaluation performed at this level (which must await the development of a far greater and more representative data base than is currently available) will provide a basis for decisions at local levels about which programs appear to be most appropriate to particular situations.

Overall FT/NFT Evaluation

Follow Through as a service program was designed to continue providing comprehensive services throughout the primary grades to children who began receiving such a program in Head Start, the preprimary program. It attempted to ensure continuity between preschool and elementary school programs in terms of the full range of "life support" services children required as well as the educational program. While the evaluation of Follow Through is primarily focused on identifying effective educational strategies, it should make it possible to determine whether children in Follow Through have an advantage over those without a Follow Through program. The answer to this broad question would have a bearing on policy decisions, such as whether to increase or decrease support for comprehensive compensatory education programs in general.* Earlier reports (SRI, 1971, 1972a) dealt with these questions more directly, but the current Follow Through interim evaluation permits the question of overall impact to be addressed.

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*Naturally, answers to policy questions such as "On the average is it 'worth it' to continue to invest in comprehensive compensatory programs for disadvantaged children and their families?" are not resolved by research evidence but depend on the valuational criteria held and the frame of reference from which the facts are viewed.

One must remember that the only things common to Follow Through treatments are that some (unspecified) set of nutritional, medical, and other services supplemented some (at least nominally differentiated) experimental educational programs. In addition, it should be pointed out that when the "treatment" is defined this loosely it is difficult to distinguish "treated" groups from comparison groups. Poor children who are compared with Follow Through children are likely to have had a primary grade supplemented by services under another name (Title I or Title III ESEA, hot lunch programs, etc). Under these circumstances, differential effects of Follow Through and Non-Follow Through "treatments" would be extremely difficult to detect.

Section II

DESIGN AND SAMPLE

Section II

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The Follow Through Evaluation Design

The basic research design for evaluating the impacts of FT planned variations is a series of replications of longitudinal comparisons of treatments versus comparisons. This design essentially corresponds to Campbell and Stanley's (1963) design 10, or "The (Pretest-Posttest) non-equivalent control group design." There are, however, a number of features that complicate the Follow Through evaluation design and that make straightforward analyses and interpretation complex and difficult.

Within a given replication of the basic evaluation design, measures are gathered on pupils as they enter school, Follow Through, and the evaluation; and subsequent measures are gathered at the end of successive experience years in school and FT. Measures are also gathered at selected times on the families, teachers, classrooms and communities with which the pupils within a replication are associated. The data elements of each such replication define a cohort in the evaluation. Those pupils in the evaluation who entered primary school in the Fall of 1969 constitute Cohort I, those who entered school in the Fall of 1970 constitute Cohort II, and so on.

The Follow Through program is administered throughout the primary school grades, that is, from kindergarten through third grade. As such, Cohort I represents a 4-year experiment commencing in Fall, 1969, and terminating in Spring, 1973. Similarly, the Cohort II replication commenced in Fall, 1970, with a new sample of participants and is scheduled to terminate in Spring, 1974. The design is complicated, however, by the fact that many of the participants within each cohort begin formal education not at kindergarten but at the first grade. Thus, two subgroups--or "grade streams"--exist within each cohort--the Kindergarten subgroup and the Entering First Grade (i.e., those participants in schools that do not offer kindergarten) subgroup. Throughout this report, we will refer to these two separate subgroups within cohorts by their respective grade levels at entrance to the cohort--Kindergarten (K) and Entering First (EF).[*]

The basic longitudinal evaluation design is summarized in Table 1. This representation displays the relationship of evaluation cohort to year of entrance into the evaluation and successive experience years within the evaluation. The shaded area represents that portion of the total design on which this report is based. Although four cohorts are indicated in Table 1, it should be noted that the basic design allows for an indefinite number of successive additional cohorts.

TABLE 1

Basic Follow Through Evaluation Framework

		Year of Follow Through Experience			
Cohort	Enter Year	First	Second	Third	Fourth
I	1969	▨	▨		
II	1970	▨			
III	1971				
IV	1972				

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[*] Note that these definitions serve to distinguish two groups of participants having different, yet "normal" (for the school district), entrance points into the experiment. These should not be confused with subgroups of pupils which "migrate" into a program at some point after these normal entrance points, e.g., pupils who transfer into or "enter" a kindergarten cohort at some point after kindergarten. These latter subgroups are not officially part of the evaluation design.

Each cohort is composed of a number of "projects," or sponsored Follow Through programs. A project consists of one or more schools in which a particular program of services is being implemented. A given program of services includes as a main feature one of 22 sponsored models, or treatments, designed to "improve the life chances of poor children." Each project resides within a single school district, although occasionally more than one project resides within a single district.

For each project participating in the evaluation, a non-project comparison--or control group--is selected and recruited for participation in the evaluation. Therefore, each cohort in the evaluation consists of a collection of treatment and comparison groups. The collection of these treatments comprise what is described as "planned variation," and this planned variation dimension constitutes the treatment variable in the overall evaluation design.

Attempts are made to obtain comparison groups that have salient population characteristics reasonably similar to those of the project or treatment groups and that are within the same or proximate district boundaries. That is, to the extent possible, comparison schools are selected because of similarity with FT school characteristics, such as ethnic composition, general level of poverty of pupil families and type of neighborhood. The purpose for obtaining these matched comparison groups is to provide a basis for validly assessing the FT program impacts by contrasting measures obtained from comparison groups with those obtained from FT groups. Thus, if matching is successful, the only relevant variable on which the two groups differ is FT, and differences on measures would be valid indicators of FT's effects. But comparison group schools participated on a voluntary basis and since these comparson groups are constituted after a FT project is implemented and designated for inclusion in the evaluation, such matching was accomplished with a highly variable degree of success. However, the important point from a design consideration is that neither the assignment of treatments to projects nor the assignment of schools to treatment or comparison groups is random.

Among the implications of this non-random assignment of treatments to projects is the resultant imbalance of treatments across locations. That is, since projects are neither systematically nor randomly assigned to treatments, no national or regional representativeness is assured. In actual fact, the imbalance of treatments across locations in the samples included in this interim evaluation shows projects as essentially nested within treatments. This nesting relationship is displayed in Figure 1, which shows both the longitudinal and hierarchical properties of the evaluation design. Hence, a given observation X_{ijkl} represents the value of X associated with the i^{th} planned variation approach (A_1, A_2, ...A_n) implemented in the j^{th} location (L_1, L_2, ...L_m) during the k^{th} experience year (Y_1, Y_2, ... Y_n) of the l^{th} cohort (C_1, C_2, ... C_n).

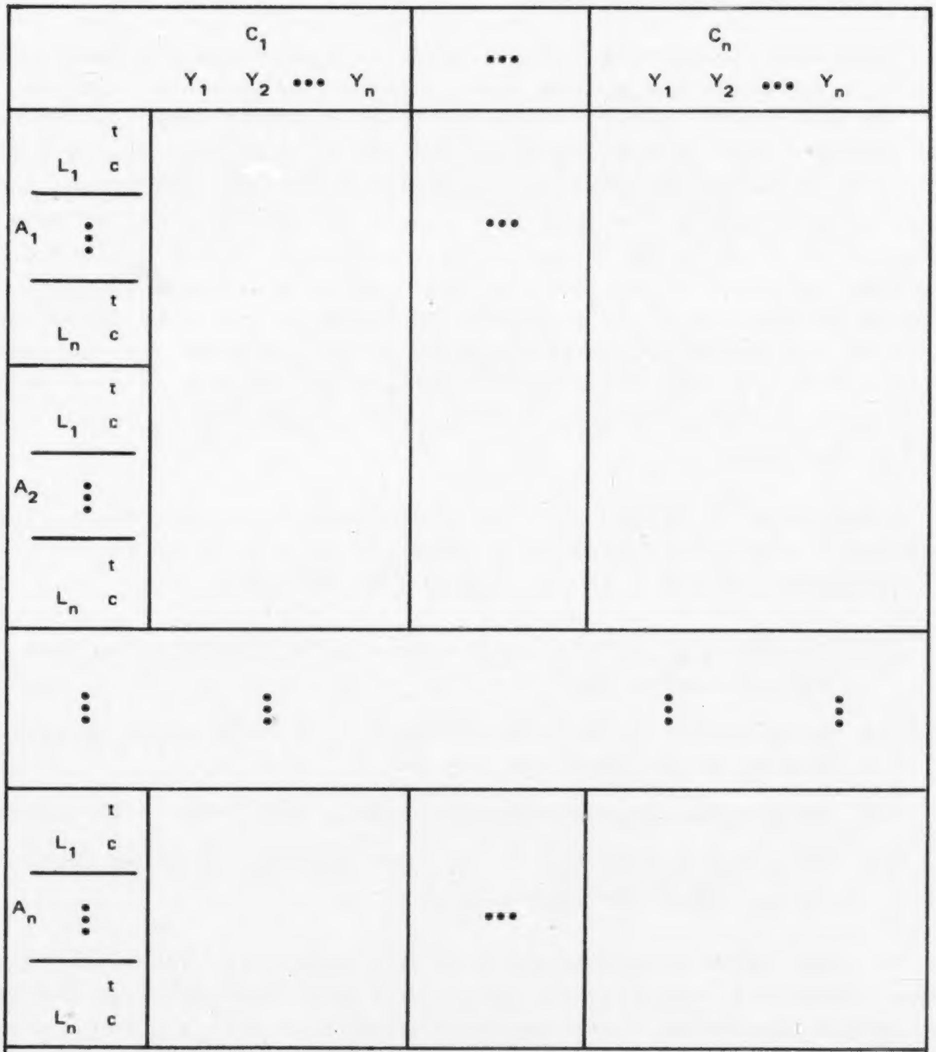
The design logic for assessing the impact of these planned variations is through pre-post comparisons of each treatment against its control. If sufficient coverage of the population distributions of disadvantaged children, their families, and communities is represented for treatments within cohorts, then further inter-approach comparisons become possible. That is, the overall, relative impact can be evaluated for those models implemented in comparable sites and with other things essentially equal (or equalized). Also, the longitudinal property of the design enables assessment of changes over time, while cohort replications enable assessment of changes in quality of implementation and associated effects.

The Sample Subset for Assessment of Interim Impacts

The portion of the overall design that constitutes the basis for this interim report extends from the 1969-70 through the 1970-71 school year, or the first two rows in Table 1. As such, the first two years of impact are being assessed for Cohort I (Fall, 1969, to Spring, 1971), and the first year of impact is being assessed for Cohort II (Fall, 1970, to Spring, 1971).

According to the pre-post design, premeasures are gathered on all members of a cohort--treatment and comparison--at the time they enter the evaluation. Subsequent postmeasures are gathered on selected subsets of these cohorts at various later times.

Since intermediate "posttesting," or data gathering, is not conducted on the total cohort sample, the interim assessment is restricted to those components and participants that have been measured. The decisions as to which and how many subsets would participate in interim measurement were based on a variety of administrative and financial considerations (SRI, 1972b) and effectively dictate the scope and generality of all interim assessments. That is, the sampling and measurement design for assessment of interim effects does not match the scope and magnitude of the overall evaluation design as schematized in Figure 1. The net consequence of these reductions in interim data will be a corresponding reduction in the interpretability and generality of interim findings.



$A_1, A_2, \ldots A_n$ = approach, or planned variation

$L_1, L_2, \ldots L_n$ = the locations in which a given approach or planned variation is implemented (i.e., the project)

t, c = the treatment and comparison schools within the project location

$Y_1, Y_2, \ldots Y_n$ = the measurement points corresponding to baseline (Y_1) and experience years ($Y_2 - Y_n$)

$C_1 \ldots C_n$ = the cohorts of the total evaluation design

FIGURE 1 THE NESTED PROPERTIES OF THE LONGITUDINAL EVALUATION DESIGN

The Project Sampling Scheme

Selection of projects for inclusion in the evaluation sample required judgments and decisions by the planned variation sponsors, USOE/FT, and SRI. In the initial phases of the evaluation (1968), the planned variation sponsors were permitted and encouraged to designate projects for both certain inclusion and certain exclusion from the evaluation sample. The primary criterion for sponsors' judgments was the state of model implementation as it could be estimated at that point. In general, sponsors requested inclusion of projects in which implementation appeared to them to be progressing well and requested exclusion of projects in which implementation difficulties were being encountered. USOE/FT also influenced the composition of the evaluation sample by designating various projects for certain inclusion or certain exclusion in addition to those so designated by the sponsors.

Finally, SRI selected additional projects from among the residual, following inclusion and exclusion specifications by sponsors and USOE/FT. The principal sampling criteria employed by SRI were:

(1) To obtain at least five projects (if available) for each planned variation.

(2) To maintain the 3:1 distribution of K to EF projects represented in the total FT program.

(3) To obtain representative geographic and urban/rural balance.

(4) To avoid impractical situations, such as locations where comparisons were unobtainable.

In June, 1970, an additional sampling constraint was placed on project selection; namely, any project would be excluded from the evaluation sample during its first implementation year with a given sponsor. This rule had retrospective consequences on data collected before its formulation, as is noted below.

A complete description of the implementation of this sampling year requires reference to 1968-69, during which many of the above criteria were initially employed in selecting projects for participation in the evaluation. In particular, 1968 was the first year of sponsor participation in Follow Through. From the total of 106 projects in Follow Through at the beginning of the 1968-69 year, sponsors designated nine projects for certain inclusion; these were projects in which the sponsors felt that implementation was proceeding well and which should be included in the evaluation. Sponsors also designated 17 projects for certain exclusion in 1968-69 since difficulties of various kinds were being encountered in implementing the Follow Through program or the specific model. In addition to the 26 projects specified for either inclusion or exclusion by the sponsors, USOE/FT designated 5 projects for certain inclusion and 10 projects for certain exclusion. From the remaining 65 projects (i.e., ones neither specified for inclusion nor exclusion), SRI selected 35 to satisfy the remaining sampling criteria of frequency and balance across sponsors, regions, and grade streams. The total sample included 49 projects in 1968-69.

Because 1968-69 was subsequently designated as an "Implementation Year," data collected on these 49 projects during that year were excluded from evaluation. All but two of these projects were, however, part of the subsequent Cohort I (Fall, 1969) sample.

Cohort I Sample (Fall, 1969)

The baseline sample for Cohort I consisted of 90 projects that were selected in Fall, 1969. At that time, all entering pupils were tested.* Of these 90 projects, 47 were sampled because they had been tested in 1968, and 42 were selected on the basis of the other sample inclusion rules. This resultant sample contained 61 K projects, 28 EF projects and one project classified as both K and EF. However, on the basis of the eligibility policy formalized in June, 1970, 38 of these 90 projects became ineligible for inclusion in the Cohort I evaluation sample. This *post hoc* reduction impaired the balance of the sampling design implemented in selecting the original 90 Cohort I projects.

This overall pattern is displayed in Table 2, which shows the distribution of project samples by sponsor for each of three measurement periods--baseline (Fall, 1969), first year (Spring, 1970) and second year (Spring, 1971). Entries for Spring, 1971 are further subcategorized to show those Cohort I projects for which *both* first- and second-year measurements were collected, and those for which only second-year measures were obtained.

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*It should be noted that the Fall, 1969, data collection included tests of entering (K, EF) and of intermediate (1st, 2nd, 3rd and 4th) grade pupils. As such, the Cohort I baseline sample reflects only a subset of the overall activity.

TABLE 2

DISTRIBUTION OF PROJECTS BY SPONSORS ACROSS MEASUREMENTS FOR THE COHORT I EVALUATION SAMPLE

	NUMBER OF PROJECTS					
	FALL 1969		SPRING 1970		SPRING 1971	
SPONSOR†	INITIAL	AFTER EXCLUSION	INITIAL	AFTER EXCLUSION	1- & 2-YR	2-YR ONLY
SS	8	7	5	5	5	1
FW	5	4	2	2	2	1
UA	7	6	3	3	3	1
BC	7	6	3	3	3	3
UG	3	3	0	0	0	2
UO	9	6	3	3	3	3
UK	9	4	2	2	2	2
HS	5	3	2	2	2	1
UF	5	3	3	2	2	1
ED	6	4	2	2	2	1
NY	2	2	1	1	1	1
SW	3	2	2	2	2	0
PI	5	1	1	1	1	0
ALL OTHERS*	16	1	2	1	0	1
TOTAL	90	52	31	29	28	18

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*Not in the resultant collection of planned variations included in this interim analysis.

†Refer to Executive Summary for full titles of sponsors.

The Cohort I sample can also be distributed in terms of grade streams as follows:

	FALL 1969		SPRING 1970		SPRING 1971	
	INITIAL	AFTER EXCLUSION	INITIAL	AFTER EXCLUSION	1- & 2-YR	2-YR ONLY
K	61	35	19	19	19	14
K & EF	1	1	--	--	--	1
EF	28	16	12	10	9	3
TOTAL	90	52	31	29	28	18

Finally, the Cohort I testing pattern can be summarized in terms of the number of projects involved in four distinct testing patterns (and one residual or non-test group) as follows:

	MEASUREMENT POINTS			
	FALL 1969	SPRING 1970	SPRING 1971	TOTAL
TESTED AND REMAINED ELIGIBLE	X	X	X	28
	X	-	X	18
TESTED BUT BECAME INELIGIBLE OR WERE PURPOSIVELY EXCLUDED	X	X	-	3
	X	-	-	41
NOT TESTED	-	-	-	72

Hence, 28 projects constitute the subset for which both first- and second-year measures were obtained, 18 projects the subset for which only second-year postmeasures were obtained, and 44 (41 + 3) the subsets for which only first-year or no postmeasures were obtained.

Cohort II Sample (Fall, 1970)

The June, 1970, USOE/FT eligibility rule was used to select the Cohort II sample, in addition to the other considerations. Eight projects that violated this eligibility rule were included for special purposes, such as obtaining measures in the fall on participants in summer programs and obtaining information on participants who had previously taken part in specific Head Start Planned Variation programs. This resultant Cohort II sample is displayed in Table 3, which shows that a total of 107 projects were included in the baseline sample and that eight of these were ineligible but were included for special purposes. Of these 107 projects, 28 were included in the Spring, 1971, testing. This CII sample is also distributed in terms of the K and EF grade streams in Table 4.

In summary, substantially fewer project samples were included in Cohort I and II interim evaluation than were initially selected. The original plan was designed to include those projects considered exemplary by sponsors, necessary or essential by USOE/FT, and representative in terms of the evaluation design by SRI. One reason for this reduction was the establishment of an eligibility rule in June, 1970, which specified that

TABLE 3

SUMMARY OF THE COHORT II SAMPLE DISTRIBUTED ACROSS SPONSORS AND MEASUREMENTS

	FALL 1970			SPRING 1971
SPONSOR†	ELIGIBLE AND TESTED	TESTED BUT NOT ELIG.*	TOTAL	ELIGIBLE AND TESTED
SS	7	1	8	1
FW	9		9	3
UA	8		8	3
BC	10		10	5
UG	3		3	0
UO	9		9	4
UK	9		9	3
HS	5	3	8	2
UF	7		7	3
ED	8		8	2
NY	2		2	2
SW	3		3	0
PI	3	1	4	0
OTHERS*	16	3	19	0
TOTAL	99	8	107	28

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*These projects (tested but not eligible for evaluation) were included in the test sample for special purposes such as assessment of summer effects, Head Start Planned Variation and so on.

†Refer to Executive Summary for full titles of sponsors.

TABLE 4

THE COHORT II SAMPLE DISTRIBUTED ACROSS GRADE STREAMS AND MEASURES

	FALL 1970		SPRING 1971	
	INITIAL	AFTER EXCLUSION	INITIAL	AFTER EXCLUSION
K	77	71	20	20
K AND EF	5	4	1	1
EF	25	24	7	7
TOTAL	107	99	28	28

projects must be affiliated with a sponsor or planned variation for at least one year before being included in the evaluation sample. This eligibility rule primarily affected the Cohort I sample. Further reductions occurred because our evaluation design specifies that only subsets of cohorts be included in measurements of interim effects. The consequences of these two reductions are seen both in the concomitant reduction in the scope of interim findings and consequent ability to generalize from them, and in the statistical precision with which any effects can be detected. These consequences are discussed more fully in Annex A, "Issues in the Analysis of the Data."

Section III

METHODOLOGY

Section III

METHODOLOGY

Introduction

In this section we will describe the general and specific features of the evaluation, instrumentation, and collection of data, construction of variables, and methods of data analysis. Where appropriate, we will distinguish between specific methodologies that were implemented in this 1969-1971 interim evaluation and the general methodologies.

This section is organized into the following four subsections:

(1) Instrumentation and data collection

(2) Procedures

(3) Definition and development of evaluation variables

(4) Analysis methodology.

Instrumentation and Data Collection

Follow Through is a complex, broad-scale educational experiment. As such, a great variety of its qualitative and quantitative components are of interest. It was clear early in the planning and preliminary evaluation activities that for FT to be evaluated as a total program, more must be measured than the participating child's academic progress. Furthermore, since evaluation interest would be focused on identification of "components" of "successful" programs, attention would need to be given to evaluating the process as well as the outcome. Also, of course, some minimum level of descriptive data would be essential.

Six basic sources of data, each of which corresponds with separate instrumentation and data collection procedures, were employed in developing this evaluation evidence. They are the following:

- Classroom roster
- Follow Through test battery
- Parent interview
- Teacher and aide questionnaire
- Classroom observation procedure
- Project descriptor inventory.

Much of the basic evaluation effort was spent on developing and refining such instruments and procedures. Their purpose and contents are briefly described in the paragraphs to follow. The nature of the evaluative questions and the focus on children's progress as the principal measure of effectiveness determined the nature of the instruments used to collect data. Clearly, this set of instruments does not begin to exhaust the types or composition of instruments that could be employed in an evaluation of all the aspects of Follow Through.

The Classroom Roster and Related Information Form

The classroom roster provides a straightforward and relatively reliable source of several categories of information about the pupils, serves as a cross reference for certain data that are collected through other sources, and provides a basis for determining program census, migration, and attrition throughout the evaluation. Specifically, this instrument is a listing of the classroom pupils by name, age, sex, ethnic group, language spoken at home, preschool experience, and amount of FT services received, if any. Other items of information available from each properly completed roster are classroom identifiers (room number, principal, school, address, district), classroom staff (teachers, aides, volunteers) and evaluation design information (cohort, grade stream, grade level, and condition--FT versus NFT).

The roster form remained substantially unchanged from year to year throughout the evaluation, although several minor changes were made to facilitate its completion and to improve the clarity of data obtained.

The Follow Through Test Battery

The principal source of evidence for program impact on pupils is the Follow Through Test Battery. This battery is administered twice each year--in the fall to obtain baseline information on children entering the program, and again in the spring to obtain progress and/or outcome information on children progressing through or exiting from the program. The same test instruments are administered to both FT and comparison classrooms within each grade level.

The contents of the FT battery have been changed from year to year of administration, and, of course, differ across grade levels within each year of administration. Nonetheless, the cognitive and noncognitive domains for which the instruments were selected are consistent both within and across years. Changes in the battery primarily reflect attempts at improved measurement, both in terms of reliability and validity of data.

Cognitive Measures--The instruments that were included at one or more levels of the test battery and that provided measures of performance within the cognitive domain are described in the following paragraphs.

The Wide Range Achievement Test (WRAT) is a multi-level achievement test designed for individual administration to younger pupils (those attending kindergartens and first grades) and possible group administration to older pupils (those attending second and third grades). Essentially, the WRAT provides a means of using a single instrument for pre-post achievement assessment, although it is unlikely that certain items appropriate for kindergarten would also be administered to third grade pupils.

The WRAT was designed to provide measures of achievement in three basic skill areas--reading, spelling, and arithmetic. Although the 1965 version of the test is standardized and normed, it contains several relatively unconventional features. First, the test is interactive; that is, the set of questions the student is asked depends on how he performs on certain items. Second, the test is of variable length for each pupil; testing is continued until particular error runs occur. Third, normative conversions are supplied for separate subtests but not for a total score. Finally, the appropriateness of these norms for the Follow Through Evaluation Sample was questioned since they were based on a norm sample of less than 2000 pupils for the age range participating (five to eight years) and, according to the technical manual, "No attempt was made to obtain a representative national sampling." (Jastak and Jastak, 1965, p. 9).

Because of the need to establish and follow uniform, rigorous, and replicable testing procedures and because of concern over certain measurement and evaluation issues (such as, the need for 12 successive errors as a criterion run, the adequacy and appropriateness of the norm conversions, and administrative problems of implementing the quasi-branch methodology), a modification of the WRAT was developed by SRI and used in this evaluation. This modification, based on age-equivalent standardization data, created four overlapping versions of the test or one for each grade level. Each such grade level of the WRAT was generated by including all items up to a point corresponding to two standard deviations above the standardization age-equivalent sample. Also, some modifications in the sequence and lexicography of items were made to improve administrability. All these changes were made in consultation with the authors and publisher. Furthermore, minor subsequent revisions in the instrument were made based on item analysis of data following wide-scale administration. These modifications essentially adjusted the limits within the grade level, i.e., adjusted the overlap.

Information on specific items in the WRAT test in terms of average item difficulty and variability of responses to each item within each grade level is summarized in Annex B of this report. Annex B also indicates the item overlap for the separate grade levels.

The *Pre-school Inventory* was administered to all pupils at entrance and at the end of the first year of the program. This instrument was originally developed by Bettye Caldwell for ETS use in the study of Early Educational Programs. The instrument was designed to survey the level of conceptual development and general information and rudimentary basic skills present in each child. The test is individually administered and has not been nationally normed. The items are, in general, appropriate for a preschool (e.g., Head Start) population. Thus, test scores approach an asymptote beyond kindergarten (i.e., there is a ceiling effect for first grade). Since the instrument measures general basic skill performance, item sampling procedures were implemented. This resulted in a reduction of test length from 64 items to a final set of 29. Statistics on these 29 items are summarized in Annex B of this report.

Another source of information regarding incoming skills or "entering behaviors" of the evaluation participants was an adaptation of the *Lee-Clark Reading Readiness* test. This test primarily assesses the child's skill at letter and word discrimination, matching, and oddity discrimination. This was administered only during the entering year and in a group mode. Item statistics are presented in Annex B of this report.

A third instrument administered only to pupils in their first year of the program is based on items developed by Martin Deutsch and associates in the *N.Y.U. Early Childhood Inventories* project. These items require number and letter discriminations and recognitions and can be considered pre-reading and pre-math, much like the PSI items. The test contains 31 items and was group administered. Item statistics are summarized in Annex B of this report.

A total of six subtests contained in the 1965 version of the Metropolitan Readiness Test were administered to pupils in their second year of the program (i.e., non-entering first graders and second graders in 1970-71). These subtests include measures of word meaning, listening, matching, alphabet identification, numeration, and symbol copying. This test was group administered and consists of 38 work items and appropriate practice items. Item statistics are summarized in Annex B of this report.

In addition to the Metropolitan Readiness items, selected Stanford Achievement Test items (1964 revision) and Metropolitan Achievement Test items (1958 revision) were administered to pupils in their second year of the program. This SAT-MAT subtest consists of 20 word reading items and 20 arithmetic computation items. The test was group administered and allowed eight minutes for word reading and seven minutes for arithmetic. Item statistics are summarized in Annex B of this report. Also included in Annex B are summary statistics describing the measurement properties of these instruments when aggregated into specific variables.

Sponsor Contributed Items--To guard against the FT Test Battery's failing to cover items relevant to sponsors' objectives, attempts were made to solicit sponsor-contributed test items and to incorporate them into the upper grade levels of the battery (first grade and beyond). These items are labeled sponsor items and vary from imbedded figures tests to measures of word reading, numeration, concept identification, alphabet skills, language/reading skills, set operations, straight arithmetic abilities, verbal analogies, and so on. These tests were individually administered. Item difficulty and response variability are summarized in Annex B of this report.

Noncognitive Measures--A substantial interest in the collection and analysis of noncognitive--or affective--indices of program impact was expressed early in the evaluation planning. However, several difficulties soon became apparent. First, unlike cognitive measures (i.e., achievement, intelligence, aptitude, readiness, etc.), noncognitive instruments have not emerged in widely accepted or standardized forms. Whether this is due to inherent difficulties in developing such instruments or in the lack of prior focus on the domain is irrelevant; the fact remains that no instrument comparable to the WRAT exists for noncognitive assessment.

Rather than abandon the domain as currently unmeasurable, limited noncognitive instrumentation was included in the battery, and a research program for the identification and evaluation of alternative noncognitive measures was instituted (SRI, 1970, 1972c, 1972d). The results of all such instrument evaluation studies to date are generally discouraging, suggesting that although the limited instrumentation initially incorporated in the battery is far from sufficient as a valid and reliable measure of affect, no better methods or instruments short of a clinical interview are currently available.

The limited noncognitive instrumentation included in the battery is called the "Faces" Attitude Inventory. It consists of a series of self-report questions, in which the pupil is asked to indicate how he feels about himself, others, school, and learning, and how others feel toward him, i.e., his peer group status, and so on. To provide each pupil, even an entering kindergartner, with a relatively unequivocal means of indicating his feelings to each such item, the tester asks each student to mark a face (smile, so-so, frown) that corresponds to this feeling. This test was group administered to pupils in the 1969-1971 assessment period.* The same instrument was administered to all grade and experience year levels.

The contents of the overall Follow Through Test Battery as administered over the period of Fall, 1969, through Spring, 1971, are summarized in Table 5. This table lists the test contents in terms of item sources for each level relevant to this interim evaluation. Also displayed in Table 5 are the maximum scores obtainable for each item source. Changes in these maximum scores reflect longitudinal (year to year) as well as grade level differences in the overall battery. It should be mentioned that during the Fall 1969-Spring 1970 test interval pupils at grade levels besides kindergarten and entering first were being tested. The scope of the testing effort extended to first, second, third, and fourth grade pupils in groups later excluded from the evaluation sample. A description of the entire data collection effort is beyond the scope of this report and is mentioned here only to provide a context for the Cohort I testing.

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*Based on subsequently developed research evidence, this and similar noncognitive instruments were individually administered to all kindergarten and first grade pupils from Fall, 1971, onward.

TABLE 5

SUMMARY OF FT TEST BATTERY--FALL, 1969-SPRING, 1971

DOMAIN	COHORT I		COHORT II
	FALL, 1969-SPRING, 1970		
	K	1ST (EF)	
COGNITIVE TESTS	WRAT (84)*	WRAT (84)	(NOT YET IN PROGRAM)
	PSI (32)	PSI (33)	
	LEE CLARK (16)	LEE CLARK (16)	
	NYU (22)	NYU (22)	
NONCOGNITIVE MEASURE	FACES (21)	FACES (21)	

	FALL, 1970-SPRING, 1971			
	1ST	2ND (EF)	K	1ST (EF)
COGNITIVE TESTS	WRAT (112)	WRAT (149)	WRAT (84)	WRAT (112)
		SAT/MAT (40)	PSI (41)	PSI (34)
	SPONSOR (30)	SPONSOR (69)	LEE CLARK (14)	LEE CLARK (16)
	METRO READINESS (40)	METRO READINESS (26)	NYU (21)	NYU (20)
				SPONSOR (14)
				METRO READINESS (32)
NONCOGNITIVE MEASURE	FACES (21)	FACES (21)	FACES (21)	FACES (21)

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*Numbers in parentheses reflect maximum possible score.

The Parent Interview

The primary source of evidence for assessment of program impact on parent, home, and community factors is the parent interview. This interview is conducted on an in-person basis and is administered by the National Opinion Research Center (NORC) under subcontract to SRI. These interviews are conducted in the early spring of each year and concentrate on sampling among parents of children entering the evaluation (both Follow Through and Comparison). In Spring, 1970, nearly 9,000 Cohort I interviews were conducted,* and in Spring, 1971, nearly 15,000 parents were interviewed, a subset of whom had children in Cohort II.

Within the overall Follow Through evaluation the interviews with parents of Follow Through children and non-Follow Through children serve four main purposes:

(1) Provide information from which to estimate the initial comparability of Follow Through and non-Follow Through children and families according to socioeconomic, ethnic, and other demographic characteristics, and to adjust statistically for noncomparability since random assignment was not possible.

(2) Provide information for sorting respondents into subgroups so that possible interactions between treatment and parent characteristics can be examined.

(3) Develop indicators of parental beliefs, expectations, and practices that characterize family life styles which may be influenced by or may mediate the effects of Follow Through program participation. Some Follow Through programs are specifically designed to bring about a considerable degree of parent involvement and parent education while others emphasize these goals only minimally.

(4) Ascertain the parent's knowledge of, participation in, and satisfaction with school programs in general and Follow Through in particular.

SRI, OE, and consultants selected a set of questions that, in their judgment and with the constraints operating at the time, best served these purposes. These items made up the first Parent Interview (Spring, 1970). The first Parent Interview items provided data in the following ten areas:

- Demographic data
- Interest and knowledge about FT
- Participation in making policy with respect to educational programs

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*During Spring, 1970, over 14,000 interviews were conducted. Decisions subsequent to data collection delimited the sample of interest.

- Contact with the school and teacher
- Feelings about ability to control one's life
- Support and guidance of child with respect to educational programs
- Extent of educationally relevant stimulation in the home environment
- Number of types of programs available to child in community
- Aspirations.

In the second Parent Interview, used as a source of data for this analysis (Spring, 1971), the following 11 content areas were used:

- Demographic data
- Awareness of what is going on in child's classroom
- Participation in policy making with respect to educational programs
- Parental involvement with educational components of planned variation
- Feelings of being able to control one's life
- Support and guidance of child with respect to educational items, and extent of relevant stimulation in the home environment
- Satisfaction of parent with school
- Satisfaction of child with school
- Expectations/anticipations/goals of the parents
- Feelings of efficacy in relation to the school
- Social life style.

Teacher and Aide Questionnaire

The Teacher and Aide Questionnaires were developed to complement and support data gathered through other measurement instruments of the Follow Through evaluation and to learn whether teachers in the Follow Through program were changing. First, the questionnaires were designed to provide profiles of the teachers in terms of demographic characteristics, the training and support they received, and the goals and attitudes they held. Second, the questionnaires could provide information about the different effects of different Follow Through sponsors' programs. As such, surveys were made of teacher practices and attitudes during both the Springs of 1970 and 1971 using a teacher questionnaire that included questions in the following areas:

- Demographic information and background
- Classroom practices
- Availability and use of equipment and materials
- Educational goals for children
- Information and attitudes about home visits and parent participation in the classroom
- Knowledge about Follow Through, manner of involvement with the program, and opinions about its effectiveness
- General assessment of pupil progress.

Some instrument revision occurred between the 1970 and 1971 administrations, and only data for the 1971 administration are included in this interim analysis. The nature of the 1971 revision reflected an increased interest in teacher characteristics and practices, and in classroom composition.

For example, portions of the instrument dealing with teacher characteristics included items designed to assess:

- Educational background
- Teaching experience
- Educational goals
- Motivation
- Training prior to current school year
- Training during school year
- Suggestions for improving training
- Help provided by sponsor
- What teachers know about Follow Through
- Discussion of Follow Through with others.

Classroom characteristics were assessed through items dealing with:

- Length of class day
- Number of children at present and all year
- Languages spoken by the children at home and in the classroom
- Teaching approaches and techniques
- Field trips taken.

Specific questions about parent involvement included:

- Parent participation in classroom
- Number of teacher visits to parent and reasons for them
- Number of parent visits to school and reasons for them
- Teachers' feelings about the importance of getting together with parents outside school.

Finally, questions about the progress of children included teachers' estimates of the progress of children in their classes on various cognitive and noncognitive characteristics. However, teachers were not questioned about individual children.

The Classroom Observation Instrument

The SRI Classroom Observation Instrument (COI) is an elaborate event recording procedure by means of which a trained observer in a classroom records interactions among teachers, aides, and children, and also records setting, kinds of activities, and groupings within the classroom. The instrument was developed to be appropriately sensitive to a broad range of activities characterizing the programs of a subset of Follow Through sponsors,* while retaining adequate reliability.

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*Sponsors included in the 1970-71 sample for classroom observations were Bank Street College, University of Kansas, University of Oregon, University of Florida, Educational Development Center, New York University, Far West Laboratory for Educational Research and Development, High/Scope Educational Research Foundation, and the University of Arizona.

The SRI Classroom Observation Instrument has three major parts--an Observation Summary Form (OSF) for describing the physical environment, a Classroom Check List (CCL), and a Five-Minute Observation (FMO) form.

The CCL, sometimes referred to as the "snapshot," attempts to record relatively static pictures (four an hour) of the distribution of adults and children among activities in the classroom. Essentially, the CCL assesses (1) activities occurring, (2) materials used in activities, (3) grouping patterns (4) teacher and aide responsibilities, and (5) children working independently.

The FMO record of interactions is completed four times an hour (i.e., following each CCL). It requires a symbol to be marked for (1) who does the action, (2) to whom it is done, (3) what is done, and (4) how it is done. A complete unit of interaction is described when the coded categories are strung into a sentence structure format or frame. This frame is a sequence of "parts of speech" or subject, object, verb, and adverb. The "Who" and "To Whom" codes make it possible to designate the person or group of persons initiating or receiving an action.

The 12 "What" codes refer to categories (e.g., question, response, instruct) that survived several iterations of instrument review with consultants and sponsors' representatives to ensure that it captured classroom interactions considered educationally significant.

The first four items in the "How" code refer to the affective aspects of an interaction between people or with materials. The next six items refer generally to strategies the teacher may use to control behavior in her classroom. The last two "How" items--"concrete objects" and "symbolic objects"--were added to capture an important distinction among instructional strategies made by certain sponsors who believe children must learn first from experiences with concrete objects before proceeding to experiences with symbols (ideas).

The FMO frame, then, is to record an interaction as a "sentence" including "Who, To Whom, What, and How." Figure 2 shows the numeric and alphabetic symbols, or codes, and their brief definitions. Operational definitions and examples are contained in the complete Training Manual. Figure 2 also shows two sample frames recording teacher-pupil interactions.

Coding a frame requires the observer to make a dot with a felt-tipped marker pen on the appropriate symbol. Special mark-sense forms were developed and adapted to the procedure to facilitate accuracy and reliability of the observation/recording process.

CODES USED ON CLASSROOM OBSERVATION INSTRUMENT

R–Repeat

Who and To Whom

T – Teacher
A – Assistant/Aide
V – Volunteer

C – Child
D – Different Child
2 – Two Children

S – Small Group
L – Large Group
E – Everyone

M – Materials
O – Confusion

What

1 – Direct request
2 – Choice request
3 – Respond
4 – Teach, Inform

5 – Comment, Play
6 – Praise
6/ – Acknowledge
7 – Help

8 – Cooperate
9 – Corrective feedback
10 – No response, Ignore, "I don't know"
11 – Refuse, Reject

12 – Observe
0 – Confusion

C–Cancel

How

H – Happy
S – Sad
N – Negative
A – Angry

G – Guide to alternative
R – Reason
C – Control by praising
Q – Question

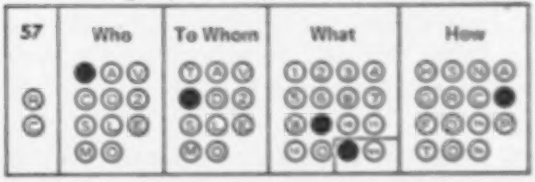
F – Firm
D – Demean
Th – Threaten
P – Punish

T – Touch
O – Object
Sy – Symbol

V – Verbal
N/V – Non-verbal

EXAMPLE OF CODED INTERACTION FROM CLASSROOM OBSERVATION INSTRUMENT

Teacher: Mary, if you had 2 pennies and your mother gave you 2 more, how many would you have?



Child: I would have 4 pennies. (Smiling)

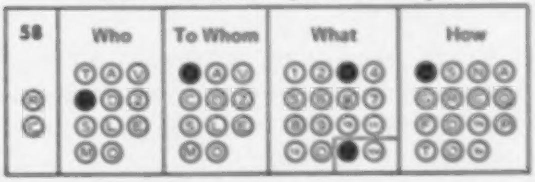


FIGURE 2

Project Descriptors

A variety of categories of data descriptive of communities, school systems and projects were collected and assembled for inclusion in the interim evaluation.

The main sources of descriptive data for the projects included in this interim analysis were the Census, Consolidated Program Information Report (CPIR) and Elementary and Secondary General Information Survey (ELSEGIS) systems, NCES documents, individual Follow Through projects' annual applications, progress and interim reports, and data already available in the SRI Follow Through data bank.

Data from the 1970 Census were available as published documents and on magnetic data tapes. However, because of difficulties with system compatibility and software, only published census reports were utilized. These included the following final Census reports:

PC(1)--A-Number of Inhabitants

HC(1)--A-General Housing Characteristics

PC(1)--B-General Population Characteristics

Similarly, anticipated software and system compatibility problems precluded use of CPIR and ELSEGIS data tapes. As such, validated listings of all ELSEGIS and CPIR data obtained for school systems and individual schools in the interim sample were used. These validated listings of data are essentially data (raw) tables in a format similar to that of the original instrument, but which have been subjected to editing and verification.

CPIR collects and enumerates statistical information aggregated at the school district level for all Federal title expenditures on the following (quoted from Federal State Task Force ..., p. 20):

(1) Number of children and number of schools in the district by pupil population groups, grade levels, and services and activities provided;

(2) Number of staff members by activity and pupil populations served, number of staff members participating in Federal programs, and Federal dollars expended on in-service training by source of funds;

(3) Dollars expended, by source of funds, pupil population groups, services and activities provided, and dollars by age/grade level;

(4) Supplemental information appropriate to specific programs, such as the ESEA Title III.

On the other hand, the ELSEGIS system is primarily designed to collect data on the individual school system and analyze these data by enrollment, metropolitan status, and geographic region. ELSEGIS, Parts A, B, and C, are surveys conducted biennially. Collectively, they cover staff, finances, public school organization, and pupils. Parts A and B give data aggregated at the school district level; for Part C, the unit is the individual school.

Procedures

The data gathered for the Evaluation of Follow Through were obtained through two general procedures: (1) direct assessment in the schools and communities as with the FT test battery, parent interview, teacher and aide survey, and community studies and (2) the use of nonreactive measures and secondary data sources, such as the FT classroom roster, classroom observation, and project descriptor data sources (e.g., Census, CPIR, ELSEGIS, etc.). Since Follow Through is a very large and complex program, correspondingly elaborate, yet systematic and detailed, data collection procedures were developed for all direct assessments. These included the establishment of:

- Instrumentation and materials development, logistics, and receipt control procedures
- Data collection training, scheduling, supervision, and management procedures
- Instrument administration, scoring, and processing procedures
- Quality control, error resolution, and data storage and retrieval systems.

Specific data collection procedures varied according to requirements of the separate instruments. Pupil data (roster and test battery) were obtained through the SRI field operations procedure. Parent interview data were obtained through in-person interview by NORC. Teacher and aide questionnaire data were obtained by mail-survey methods. Classroom process data were obtained through the classroom observation procedure. Project descriptor data were acquired from secondary sources. Community studies data were obtained on a case study basis. Each of these procedures is described in the following paragraphs. Where appropriate, they are discussed in terms of development, training, administration, and processing components.

Rostering Procedure

Roster data were a basic source of relevant descriptive information on pupils and classrooms and thus were essential for the interpretation of test scores and for the organization and management of all subsequent longitudinal data. The initial procedure for collecting roster data involved reliance on site personnel and classroom teachers. Specifically, rosters were distributed at the end of the school year to classroom and school personnel via FT Directors. These local personnel were to complete the rosters and return them to SRI, also via the FT Directors. However, over the course of the evaluation, procedures employed to gather these roster data were revised because feedback indicated that problems were encountered in this initial procedure. This revision involved the following two major changes, which were implemented in the 1970-71 rostering procedure:

(1) Rostering of all classrooms scheduled for any testing (either Fall or Spring) was completed twice during the school year; at the time of fall testing and at the time of spring testing.

(2) Responsibility for accuracy and completeness of rosters was assumed by SRI field staff (described below) who worked with local school personnel and teachers in obtaining and validating roster data.

These revisions greatly improved the quality and completeness of roster information, which was, of course, essential, since rosters provide the major basis for linking up longitudinal data; for tracking control schools, classes, and pupils; for organizing all pupil, classroom, and teacher data into appropriate subgroups (e.g., FT/NFT); for defining the parent interview sample; and for organizing the data storage and retrieval system.

FT Testing Procedure

As described in the instrumentation section, the FT battery consisted of several grade-specific and several grade-overlapping test instruments. Moreover, some changes in the grade-specific contents of the battery were made from Fall, 1969, to Spring, 1971, (the duration of this interim evaluation). These modifications generally reflect subtle changes in evaluation focus over the interim period as well as instrument refinement based on item analyses of preceding administrations.

Parallel to the instrument refinement, substantial development and modification of training and administration procedures occurred. Specifically, the training and test administration procedures for Fall, 1969, data collection employed 36 SRI/FT "regional representatives," whose responsibility it was to recruit, train, and supervise test administrators and coordinate the collection of data from over 35,000 pupils in 90 projects. (The Fall, 1969, Cohort I sample). These regional representatives generally were university faculty (most from schools of education) and were recruited as consultants to SRI. These representatives attended a single, central training session conducted by SRI project staff. The training included testing procedures, test receipt control, shipping and documentation procedures, and various scheduling and administrative details. Each representative was responsible for hiring his own testing staff and for conducting his own local training session in accordance with guidelines established by SRI. (SRI, 1969). Each regional representative was assigned between two and four projects and supervised an average of 10 testers.

Several features distinguishing the Fall, 1969, test effort were the use of supervising, assistant, and aide testers at the classroom level; attempts at the use of systematic scheduling for test administration (with pupils assigned to schedules at random); and the use of multilevel management procedures to establish uniform supervision and control over the brief but wide-scale test program. All pupil tests were to be administered within a two-week period, hopefully between the sixth and eighth week following the commencement of school and again between three and six weeks prior to completion of the school year. Within these testing intervals, attempts were made to test FT and NFT classrooms simultaneously, alternating testers between FT and NFT classrooms at random. Regional representatives served as test coordinators, field supervisors, staff trainers, and SRI-project liaisons.

Experience gained in the preliminary data collection activities in 1968-69 indicated that these procedures should be adequate, especially since the time available in which to develop and implement any procedure following specification of the battery and approval of the sample was extremely short. Recall that Cohort I K and EF samples were only a subset of the Fall, 1969, sample. Data were also collected on continuing first, second, third, and fourth grade pupils at these sites. Also, because of the scope and magnitude of the Fall, 1969, effort, and because of delays in negotiating the content of the test battery, completion of Cohort I baseline testing often occurred as late as December, 1969, nearly half-way into the school year. This unavoidable delay in the Cohort I baseline testing has unfortunate consequences on the validity and utility of resultant data, particularly for those programs designed to produce large early impacts. For example, if a program had a large effect on improving performance of

FT pupils during the interval between commencement of school and baseline testing, these FT pupils will invalidly appear as "more able" at baseline. If this difference is considered or adjusted for in an analysis of FT/NFT outcomes, the net effect will be that of "adjusting out" the impact of the program--making the statistical test biased against finding an FT program effect.

Nevertheless, the decentralized nature of this operational plan led to variation in the quality and completeness of data collected. That is, consultants differed in their approaches to training, scheduling, and documentation such that occasionally irreplaceable gaps in baseline data (both rosters and test battery) resulted. These data problems were largely eliminated in subsequent data collection when it became possible to (1) establish permanent centralized data collection managers who were called "field supervisors," (2) replace "regional representatives" with locally recruited "site coordinators," and (3) establish uniform regional training programs, which were attended by site coordinators and supervising testers. These changes amounted to centralizing data collection management at SRI (as implemented by the field supervisors), and further standardizing the training and administration procedures (senior testers attended regional training). By the Spring, 1971, testing period, these procedural revisions were sufficiently refined that the quality and quantity of relevant data were clearly superior to those obtained in Fall, 1969.

Under this improved standardized testing procedure, classroom testing was conducted by a test team consisting of a supervising tester, an assistant tester, and two or more aides. Several such teams worked at each site. The supervising testers within a testing site reported to the site coordinator, who in turn was responsible to a designated field supervisor.

Regional training was conducted by SRI training experts and field supervisors. All site coordinators and field supervisors were required to demonstrate understanding and competence in the administration of all tests and in the completion of all control and data forms. These regional trainees, in turn, conducted local training for test assistants and aides (project hires) under the supervision of the field superviser.

Testing was accomplished within the second to fourth week after commencement and before completion of the school year. Again testers were randomly balanced across FT and NFT classes. Upon completion of testing, test booklets and data forms were shipped to SRI for hand processing. The processing of test data into machine readable form was accomplished with very high precision by means of two coding verification steps (100 percent and variable sample) and through comprehensive editing and resolution procedures in the FT data storage system. Roster and test data were linked in this storage procedure.

Parent Interview Procedure

The administration of the parent interview (PI) survey was subcontracted to National Opinion Research Center (NORC). However, SRI was responsible for developing and revising the instrument, for selecting projects and specifying the parents to be interviewed, and for scheduling the survey and follow-up activities. In close collaboration with SRI, NORC was responsible for the recruitment, training, and supervision of all interviewers. In general, NORC attempted to recruit local (40 sites) interviewers through the assistance of the FT directors and PAC chairmen.

The respondent to the PI was the mother or the mother surrogate when available; in the majority of cases, the respondent was the mother. If neither the mother nor a mother surrogate was a member of the household, the father was sought as respondent; if he too was unavailable, a responsible adult in the household was interviewed.

The designation of participants for each PI interview sample was based on the corresponding year's pupil test sample. For both the 1970 and 1971 administrations of the PI, the following criteria were employed:

(1) At sites where 110 or fewer entering pupils were tested, all corresponding households were scheduled for interviews.

(2) At sites where the number of pupils tested exceeded 110, random selection of 110 households defined the interview sample. Thus, up to, but not more than, 110 interviews were administered at each site, each year.

The Follow Through sponsors provided NORC with lists of households to contact. In Spring, 1970, a 96.5 percent net response rate was obtained from an original assignment of 14,800 cases. In Spring, 1971, of the 15,174 possible respondents, all but 397 were interviewed, giving a net response rate of 97.5 percent. These approximately 15,000 interviews per year represent the total survey effort. As has been noted earlier, relevant Cohort I and Cohort II samples are only subsets of these efforts. Nevertheless, we feel it is reasonable to assume that the same return rates prevailed for these subsamples.

As a control on quality, NORC checked between 15 percent and 25 percent of the respondents by phone or mail to assure that the interview had taken place. Except for the first few interviews at each site, interviews were selected for validation at random. In addition to verifying the original interview and the answers to a few key questions, NORC asked respondents questions about their reaction to the interview itself. The validation forms were transmitted to SRI. Whenever a respondent refused the first attempt to interview, another interviewer (often the supervisor) recontacted the respondent and either obtained the interview or learned more about the reason for the refusal. The overall direct refusal rate was well under 1 percent.

Teacher and Aide Survey Procedure

Survey data for teachers and aides for this interim evaluation are based on self-reports of respondents to the Teacher Questionnaire and the Aide Questionnaire. These questionnaires did not entail any in-person interviewing, nor were any forced compliance procedures employed.

During the last two weeks of April, 1971, questionnaires were mailed to all Follow Through coordinators, to be distributed to both Follow Through and non-Follow Through teachers whose classes had been tested in the Fall, 1970. During the last week of May, an additional 200 questionnaires were sent out to Follow Through coordinators for teachers whose classes were tested in the Spring but not in the Fall. Each Follow Through teacher received one aide questionnaire for a regular classroom aide to fill out. If more than one aide worked in the classroom, the teachers were instructed to alphabetize the aides by the last name and give the questionnaire to the second one on the list. There were 1,774 teacher questionnaires and 933 aide questionnaires sent out. Of the teachers, 993 were Follow Through and 781 were non-Follow Through.

Of the 1,774 teacher (993 Follow Through and 781 non-Follow Through) questionnaires sent out, 1,462 were completed and returned for a response rate of 82 percent, and of the 993 aide questionnaires sent out, 804 were completed and returned for a response rate of 80 percent. At present, no data are available on determinants of refusal.

Completed questionnaires were processed by a team of three coders, one checker, and one supervisor. For the aide questionnaire, two coders, one checker, and one supervisor were used. Each booklet was coded and checked for errors and open-ended responses. The supervisor verified processing of every fifth questionnaire. A two-step verification of key-punching was employed--100 percent verification and 5 percent verification.

Classroom Observation Procedure

Observers completed a programmed home study course in which they were acquainted with the Classroom Observation Instrument and learned the definitions of the coding symbols. They then attended a four-day intensive training session with an instructor for every four trainees. This session dealt with standard procedures for the conduct of all actual observations. After passing a final coding criterion test, observers went to their designated field sites.

In Spring, 1971, each classroom in the Classroom Observation subsample was observed for two consecutive days. An Observation Summary Form, mainly identifying the classroom and noting number of children, was filled in once. The Classroom Check List and the Five-Minute Observation of interactions were completed at the rate of approximately four per hour, or approximately 16 per day (fewer for most kindergartens, which were half-day sessions). One completed CCL and FMO constituted a unit called Classroom Observation Period (COP). Observers were instructed to include one of each kind of adult/child grouping and one of each major type of activity as the focus of their five-minute observations. A COP constituted the unit on which the frequency of the process variable was based.

Reliability checks were made by on-site simultaneous coding by observer and SRI Classroom Observation trainer for two hours in the same classroom (eight five-minute observations).

Observations were conducted by the same observers in both Follow Through and non-Follow Through classrooms at the same site.

Project Descriptor Procedures

For the project descriptors study approximately 1,500 individual pieces of data were collected for each of the 45 projects in the sample. In all, more than 75,000 pieces of data were collected and processed. Generally, data collection involved a heavily concentrated effort because of the time limitations. Data sources are indicated below, along with estimates of how much of the data we actually have been able to collect from each source.

The high return rates indicated above may be somewhat misleading for two reasons. First, the percentages given above represent the proportion of the total sample (N = 45) for which we have data. For some sources some of the sample projects were not included in the original data gathering. Hence for the ELSEGIS data a 100 percent completion rate is unobtainable because one of our projects was not surveyed by ELSEGIS. On the other hand, in a significant number of cases, portions of the information contained in a given source are either incomplete or apparently inaccurate. Lack of completeness has been a particularly difficult problem with the project applications. Copies of individual project applications were requested directly from the 45 sample projects. These applications were received over a period of several months, extending into Spring, 1972, well into the data processing stage of our study.

Secondary Source	Percentage of Projects for Which Source has been Obtained
Census	100%
NCES and State Education Agency publications	75
CPIR data	91
ELSEGIS	
Part A--Staff	95
Part B--Finances	97
Part C--Individual schools	90
Local Follow Through project (annual) applications to USOE	100
SRI Follow Through Data Bank	
Child Roster data	100
Teacher/Aide Questionnaire data	100
Parent Interview data	64
Personnel Roster data	84

Because of the pressing need to begin the data processing stage of our investigation, the codes had to be formulated before a fully representative set of proposals had been made available to SRI. Thus the codes, although they do provide for a wide variety of responses, do not cover every contingency and are more suitable for some projects than for others. For example, proposals from New York City and Philadelphia were not received until after the codes had been constructed. Certain distinctive features of both sets of projects could only be approximated by the codes available. This phase of our study has produced codebooks for the various source documents and an elaborate set of coding instructions for the project applications.

Given these constraints, the reliability and validity of the resultant data, although high, could be improved. Attempts were made to improve the accuracy of project data through phone calls to the projects, examination of the project master files maintained at the U.S. Office of Education, Follow Through Branch, and discussion with the SRI field staff. Also, among the techniques used to assess or improve the reliability of descriptor data were:

(1) Use of multiple sources to check for inter-source consistency

(2) Estimation of internal consistency within a given source

(3) Checks for reasonable consistency across time when appropriate data were available.

Community Studies, 1970-71

Community studies conducted during the evaluation year 1970-71 are part of a series of developmental studies aimed at identifying the patterns of institutional change--both those taking place within the school and those involving relationships between the school and the larger community--emerging within Follow Through.

The 1970-71 phase of the studies was designed to test the viability of a tentative model of institutional change that had been developed from case studies conducted between 1968 and 1970. This model suggested that the level of parental involvement in the local projects was a critical factor in the process of institutional change. It further identified certain determinants of the level of parent involvement in Follow Through. These factors include organizational characteristics of the project and its Parent Advisory Committee (PAC), social-psychological attributes of the parents (role expectations, conflict, etc.), and resources.

The 1970-71 effort was conceived as a preliminary investigation into the relationship between certain psychosocial and organizational variables and the level of parental involvement in Follow Through projects. Nine projects were purposively selected to comprise the sample for the exploratory study. Because of the sample's small size and judgmental nature, no generalizations--especially conclusions regarding differences among sponsor approaches, projects, or geographic regions--are warranted.

The study consisted of two parts. For the part concerned with the relationship between organizational aspects of individual projects and the overall level of parental participation, unobtrusive techniques were utilized to gather information on individual projects. Annual project applications and interim and progress reports were obtained and scrutinized. USOE/Follow Through master files, containing reports on individual projects prepared by General Consultants and Specialists, were consulted. Demographic and population data describing the community and the Local Education Agency were obtained from sources at the Bureau of the Census and at National Center for Educational Statistics (particularly ELSEGIS and CPIR), respectively.

Both the qualitative and quantitive data obtained from these secondary sources were used to develop a descriptive profile for each project, which focused mainly on the school year 1970-71 but did not necessarily exclude evolutionary and developmental factors extending back to prior years. The profiles were reviewed by project directors, PAC chairmen at the respective projects, and project officers. This review was undertaken not only to establish the factual accuracy of the data but also, and equally importantly, to determine whether the "gestalt" of a given profile coincided with the views of persons familiar with that project. The profiles were then synthesized and analyzed.

For the phase of the study concerned with social-psychological factors underlying parental involvement, semi-structured interviews were employed. Respondents were purposively selected samples of parents and teachers in the nine projects. Although general guides were used in conducting the interviews, respondents were allowed and even encouraged to narrate their perceptions of their own and others' roles and role relationships. No attempt was made to prevent respondents from offering personal, subjective descriptions of causal patterns that they believed linked various role performances to variations in mode of involvement or to variations of activities.

This technique was selected with the aim of ascertaining a range of expectations, attitudes, norms, and patterns of behavior for parents and teachers. Although no two respondents received exactly the same interview treatment, questions pertaining to expectations and behaviors were structured and similar for all respondents. Follow Through parents (including PAC chairmen) and teachers were asked about the attributes, broadly defined, that they perceived as most essential for determining legitimacy and probability of their participation in the program.

Since these studies were conducted on only 7 of the projects included in this evaluation, their results are not included in this report. The interested reader is referred to the Draft report (SRI, 1972b, Appendix E) and to a forthcoming revision scheduled for publication in Spring 1973.

Definition and Development of Evaluation Variables

Before we describe the procedure for defining and developing evaluation variables from instruments and data collected, it might be useful to review briefly the general model for evaluating the overall FT program and its planned variations. In its simplest form, the model assesses the differences between participants and nonparticipants in Follow Through on measures and variables of interest. These measures or variables are referred to as "outcomes," and differences in outcomes are defined as "impacts." Before any such assessed differences may be attributed to program participation (i.e., before impact may be ascribed to the program), it is necessary to establish that participants and nonparticipants were comparable (i.e., establish some degree of *ceteris paribus*) before implementation of the program. These measures of comparability are defined as control variables or "inputs" in the evaluation model. Finally, after comparability of inputs has been established (i.e., input differences have been controlled), impacts can be interpreted in terms of a third class of variables--namely, process or treatment variables and components. Thus there are three classes of variables in our evaluation model: (1) input or control, (2) process or treatment, and (3) impact or outcome.

When we apply this model to the Follow Through experiment, we see that it applies at three interrelated levels--or impact foci--each roughly corresponding to a general objective held for the Follow Through program by at least one stakeholder group. The first level--and the one central to this report--is the child. What are the overall and differential impacts of Follow Through on the educational, psychological, and social growth and development of children? The second level--obviously interrelated with the first--is the parent/home and community. What are the relative overall and differential impacts of Follow Through on parent, parent-child, parent-school, and parent-community factors? The third level--also interrelated with the first and second--is the teacher, classroom, and school. What, for example, are the overall and relative impacts of Follow Through on teacher attitudes and behavior; classroom practices; curriculum reforms; and school funding, staffing and service policies?

For each of the above levels, the evaluation question was posed in two forms: what, if any, are the general or overall impacts; and what, if any, are the differential (i.e., input or process specific) impacts of Follow Through? The first form of the question is designed to assess and evaluate Follow Through as a national program. The second form is appropriate for assessing and evaluating planned variations of Follow Through. We believe that limitations in the scope, representativeness, and duration of "treatments" of the programs included in this interim report, as well as a number of data and analysis problems discussed below, severely restrict answers to such evaluation questions at this time. Nevertheless, the soundness of this evaluation approach should be evident and, as applied to these interim data, could reveal emerging program effects.

Basic Variable by Category Matrix for Evaluation Data

Table 6 presents a summary of the organization of data sources and instruments into appropriate evaluation variables in terms of the basic evaluation model. This table shows the separation as well as the overlap of the various instruments in terms of how each contributed to evaluation variables. In the following paragraphs, we describe our method and procedure for organizing our data into appropriate evaluation variables and refer to relevant operational definitions.

TABLE 6

ORGANIZATION OF DATA SOURCES INTO CATEGORIES OF EVALUATION VARIABLES FOR ASSESSMENT OF INTERIM EFFECTS

	CONTROL MEASURES	OUTCOME MEASURES	DESCRIPTIVE PROCESS MEASURES
CHILD EVALUATION DATA			
	ROSTER BASELINE TESTS PARENT INTERVIEW	ROSTER (ATTENDANCE) POSTTESTS	PROJECT DESCRIPTOR CLASSROOM OBSERVATION PROCEDURE
PARENT EVALUATION DATA			
	PARENT INTERVIEW	PARENT INTERVIEW	(COMMUNITY STUDIES)
TEACHER EVALUATION DATA			
	TEACHER/AIDE QUESTIONNAIRE	TEACHER/AIDE QUESTIONNAIRE	

Variables at the Child Level

The principal source of variables at the child level of evaluation was the Follow Through test battery, although the roster and the project descriptors also contributed data.

Outcomes--The FT battery provided measures of constructs within two domains--cognitive and noncognitive. Cognitive measures were both heterogeneous and varied from year to year, whereas noncognitive measures were obtained from the single, relatively homogeneous Faces Attitude Inventory. Correspondingly, the pupil cognitive variables--e.g., "achievement"--are represented at several levels of specificity or aggregation, whereas a single noncognitive or "attitude" variable is employed. These achievement constructs are as follows:

(1) Total achievement--defined as the raw score sum of all correct responses on all cognitive test items.

(2) WRAT achievement--defined as the raw score sum of correct responses to the WRAT test.

(3) Quantitative skills--defined as the raw score sum of correct items pertaining to quantitative concepts--such as numeration, operations (addition, subtraction, etc.), and word problems.

(4) Reading skills--defined as the raw score sum of correct responses to items requiring reading or reading-related skills (including pre-reading), such skills as alphabet/letter recognition, matching and copying, figure copying, word matching, symbol matching, oddity discrimination.

(5) Language Arts--defined as the raw score sum of correct responses to items requiring language, lexicographic, or grammatical skills such as analogies, word meaning, spelling, and concept activation.

(6) Cognitive Processes--a residual category consisting of the raw score sum of correct responses to items requiring perceptual motor skills and concept identifications.

It should be noted that in this organization of instruments into variables, the quantitative, reading, language, and cognitive process variables consist of mutually exclusive subsets of the total achievement variable. The WRAT achievement variable, on the other hand, overlaps with both the total achievement variable and the quantitative, reading, and language variables. A reliability analysis of these outcome measures is presented in Annex B of this report.

The attitude measure initially comprised two components: psychological--or feelings toward self, others, school and learning--and sociological--or perceived peer acceptance, social distance, and associated sociograms. These latter measures were abandoned because of lack of reliability and validity, yielding a single measure for the noncognitive--or attitude--variable. This measure is defined as the scaled sum of self reports of feelings (sad = 1, so-so = 2, happy = 3) toward a series of standard situations.

Finally, a nonreactive measure of interest was obtained from the classroom roster for use as a child outcome. This measure, attendance, was simply the number of days absent in the preceding academic year up to the time of rostering.

Controls--A preliminary inspection of test, roster, and descriptor data indicated that although the FT and comparison (NFT) school pupils were similar in many--if not most--respects, important initial differences existed, particularly on measures assumed (or demonstrated) to be related to outcomes, such as baseline test scores. Consequently, three categories of control (input) variables were defined and subsequently utilized to generate "comparability" in the analysis for program effects. These categories of control variables were:

(1) Baseline differences--defined as the entering scores on each of the above defined outcome variables (i.e., achievement, WRAT, quantitative, language, reading, cognitive process, and affect).

(2) Environmental differences--defined as home, school, and community demographics and SES factors, such as parents' education, occupation, race, income, sex and employment of head of household (HH), urbanization of the community, the pupil/teacher ratio and average per pupil expenditures of the school. So that these measures could be aggregated within an analysis, education was dichotomized at high school diploma, race as Black versus non-Black, income as poverty eligible versus noneligible,* and employment of household head (HH) as working versus seeking employment.

(3) Individual/experiential differences--defined as average pupil age, sex, race, and preschool experience. Pupil age was calculated in months at the time of baseline testing. Sex is represented as the percent male pupils, race as the percent black, language as the percent of pupils for whom English is the first language, and preschool is either (a) actual months of Head Start or equivalent preschool experience, or (b) percent of pupils having some Head Start or equivalent education.

Variables at the Parent Level

Parent involvement in their child's learning and parent participation in school activities (at least at the level of awareness of or knowledge about the school program) are considered important or even crucial in the various Follow Through models. In some, such as the Parent Implemented models, parents are as much or more the objects of program influence as their children. Other models (e.g., the Florida Parent Education Model) seek to influence child development through the mediation of parent behavior and direct their efforts to parent education.

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*See the explanation of the OEO poverty guidelines for interpretation of eligibility on page 84 of this report.

Regardless of differences in emphasis and focus, all Follow Through approaches attribute substantial importance to parent attitudes and behavior. Therefore, several evaluation variables at the parent level were defined and incorporated in the impact analyses. The principal source of these parent level impact variables was the Parent Interview Instrument.

Measures of parents' attitudes and behaviors were obtained from selected judgmental groupings of criterion items on the PI schedule. Responses to each such item were tabulated and distributed, and the resultant distributions were each dichotomized at their respective medians. The rescaled item scores (1,0) were then aggregated such that the variable scores were the simple sum of item scores. Finally, these sums were converted to a standardized distribution through use of the formula

$$V_k = \frac{X_k - M_K}{SD_K} \quad ,$$

where X is the aggregated item scores, M is the mean of the aggregated scores, and SD is the standard deviation. These standardizations were performed separately for FT/NFT by variable, cohort, and grade stream.

The specific parent impact variables used in this interim evaluation are the following:

(1) Parent-child interactions, or the extent to which parents report they actively interact with their children in such activities as talking with their children, taking their children on trips, helping their children with school work, reading to them, accepting assistance from them, and acknowledging their progress in school.

(2) Parent-school involvement, or the extent to which parents report they are actively participating in various school-related activities, such as classroom visits, volunteer assistance, parent/school meetings, and external contacts with school personnel.

(3) Child academic expectations, or the extent to which the parent reports satisfaction with the child's progress and optimism regarding the child's future, both academic and non-academic. (E.g, what are the child's expected grades, chances of getting a good job, chances of going on to college?)

(4) Sense of control, or the extent to which the parent reports a sense of concern and control over school procedures, educational reforms, and school awareness of and responsiveness to parent and community desires and needs.

Other parent measures that were similarly scaled but that were not included in this interim analysis (generally because of an excessive amount of missing data or inadequate response variability) were:

(5) Parent-social interactions, or the extent to which parents actively interacted with others in the community (e.g., visit with friends, visited by friends, club memberships, etc.).

(6) Parent locus of control, or the extent the parent reports a sense of control over his/her fate and life chances, as well as those of others.

(7) Parent participation in PAC, or the extent to which the parent reports awareness of and/or participation in the Policy Advisory Committee (note: variable has meaning only for FT parents).

Since the same intraproject variability (FT/NFT) noted for child outcome measures would be present and potentially bias estimates of program impact on parent outcomes, it was necessary to develop and employ a set of variables to control for initial or unintended differences in the parent sample. Many of these control variables are identical to those developed for child level analyses to control for effects of environmental differences.

Variables at the Teacher Level

Outcomes--To assess the relative impact of Follow Through on teacher attitudes and behavior, information obtained from teacher and aide responses to the questionnaires administered in 1969 and 1970 was assembled into outcome measures of interest. The procedure adopted for developing these measures was essentially the same scaling method as that used to develop parent outcome and control measures. Items were assembled into logical and judgmental groupings, responses were rescaled after dichotomizing the distribution for each item at or nearest the median; the rescaled item scores were then aggregated into a grouping or variable score. These scaled variable scores were finally transformed into a standardized metric with Mean = 0, SD = 1.

The specific teacher outcome variables prepared for analysis of program impact are as follows:

(1) Parent-educator image, or the extent to which teachers reported they felt it essential to "get together with parents outside of the classroom" for purposes of

- Improving children's learning
- Improving classroom teaching
- Learning parents' views on teaching
- Improving school services to parents
- Improving school services to children
- Improving school services to community
- Parental understanding of school program.

The logic of this measure or index of teacher attitude toward parents is that if parents are being brought more into the mainstream of their children's education through the FT programs, and if their participation is being viewed as helpful by teachers, these effects should be reflected in differences between FT and NFT teachers on scores for the above variable.

(2) Professional acceptance of method, or the extent to which the teacher reports she would not prefer to adopt some teaching approach other than the one she is currently using. The logic for use of this variable as a measure of impact is that if teachers perceive their current method as appropriate and effective to the needs of the children, they should express less interest in alternative methods. Essentially, this measure provides an indirect assessment of teacher satisfaction with her current approach.

Controls--Again, as with parent and child variables, attention was given to establishing comparability of teachers on variables not defined or considered as impact foci, but which were believed to be or demonstrated to be related to (or concomitant with) such impacts. Two sources of such "control variables" data were the teacher questionnaire and project descriptor instruments described in a preceding section.

Two general categories of teacher control variables were defined and generated:

(1) Resource, or the general staffing, expenditure, facility and related resource patterns of the school. Variables comprising this category of controls were:

  - Urbanization of the school district
  - Average district expenditure per pupil
  - Average district pupil/teacher ratio
  - Number of helpers--aides, paraprofessionals, parents--made available to the teacher
  - The book and library facilities available to pupils in the class.

(2) Background/Experience, or the ethnicity, attitude and experience of the teacher. Variables comprising this category of controls were:

  - Teacher race (Black vs non-Black)
  - Satisfaction with working conditions, or the average scaled response (very satisfied to dissatisfied) indicating teacher satisfaction with working conditions in her classroom on such specifics as equipment, supplies, space, class schedule, salary, and planning time
  - Community closeness, or whether or not the teacher is a resident (new versus long time) of the dominant pupil community
  - Teaching choice, or the extent to which the teacher actively sought her current school and classroom assignment (teacher's current school and classroom assignment resulted from her request, from an administrative request, or from an administrative assignment)
  - Experience, or the sum of the above median responses on training and experience questionnaire items, such as highest grade level attained, degree attained, social science courses taken, type of certificate held, tenure, years and level of full time teaching.

Project Variables

The project descriptor procedure was essential to the development of measures that usefully characterize the sites in which projects were evaluated. Of the many such descriptors developed and analyzed, (SRI, 1972b, Appendix D) we selected the following set as most useful in describing the projects in this evaluation:

(1) Region--geographic location of project (see Figure 3)

Northeast
  New England
  Middle Atlantic

North Central
  East North Central
  West North Central

South
  South Atlantic
  East South Central
  West South Central

West
  Mountain
  Pacific

(2) Urbanism--distance to nearest Standard Metropolitan Statistical Area (SMSA)

- Within SMSA
- 20 miles from nearest SMSA
- 30 to 40 miles from nearest SMSA
- 50 to 70 miles from nearest SMSA
- 75-120 miles from nearest SMSA

(3) Size of nearest SMSA--1970 Census population of SMSA in which the project resides or is proximate

(4) Percent nonwhite--percentage of community population that consists of minority group members

(5) Project Size--number of pupils participating in project

(6) Average number of pupils per PAC member in the project (project enrollment ÷ size of PAC)

(7) Follow Through Per Pupil Cost--Follow Through expenditure per child per year, in dollars.

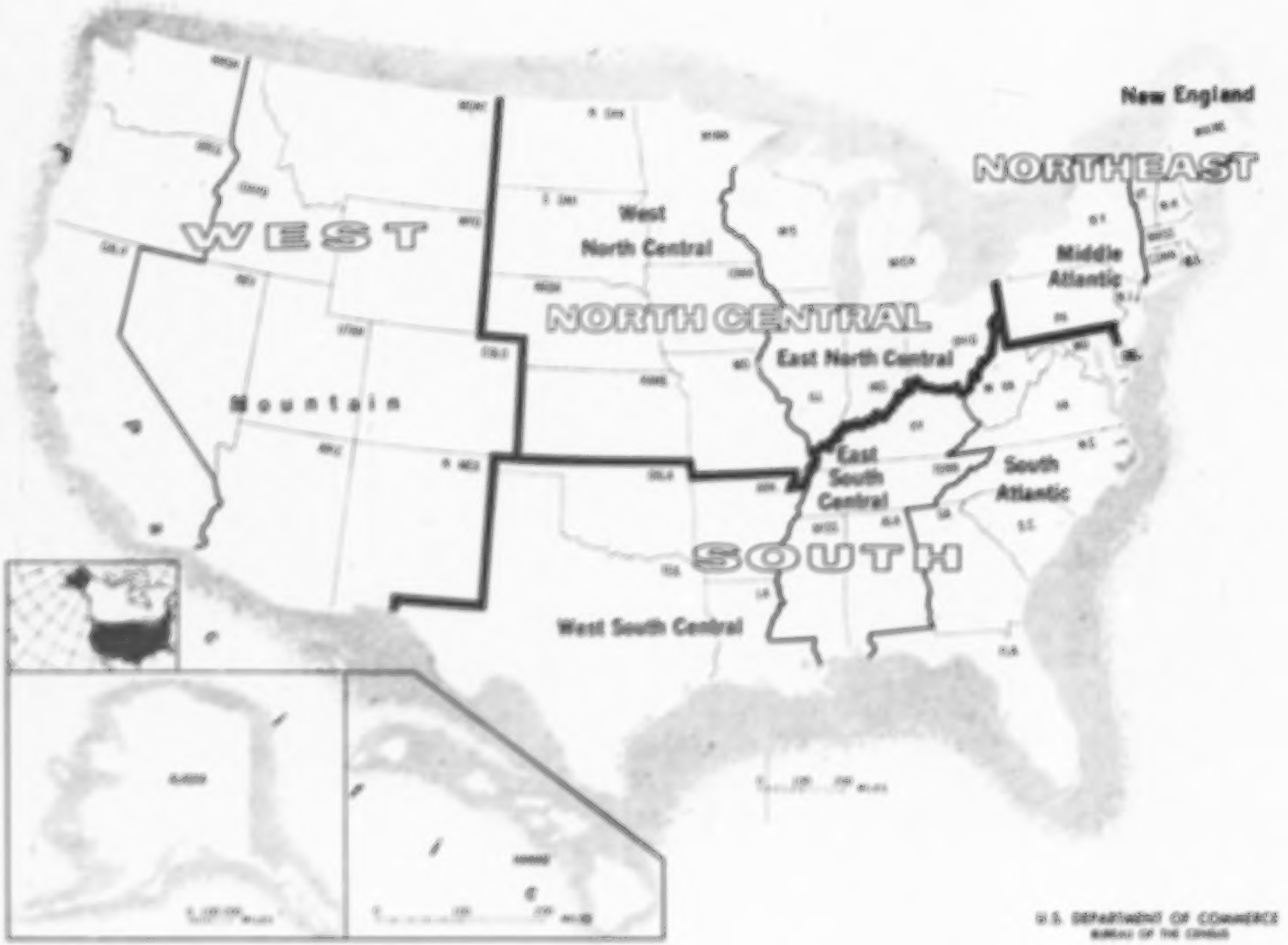

FIGURE 3 CENSUS REGIONS AND GEOGRAPHIC DIVISIONS OF THE UNITED STATES

Process Variables

On the basis of discussions with sponsors regarding the elements considered important to their models, variables were defined on the activity, grouping, and interaction codes of the Classroom Observation Instrument.

Variables defined on the Classroom Checklist included classroom grouping arrangements (e.g., adult with small group, child alone) and activities engaged in (e.g., block play, arithmetic/numbers). For example, a variable such as "wide range of activities" was designed to capture the simultaneous occurrence of many activities in the classroom, which would be expected to be more frequent in "open classroom" models than in more highly structured, academic models.

Variables defined on the Five Minute Observation sometimes required information from one code or one frame (e.g., "Adult asks child a thought provoking question") and sometimes required information from a sequence of frames (e.g., "Adult question --- child response --- adult praise"). Forty-one variables were created.

Since some information reduction appeared necessary, several general dimensions on which educational models would be expected to differ were hypothesized, such as child-directed versus teacher-directed and structured versus open.

The 41 variables were then arranged in a correlation matrix and subjected to a principal components analysis. Two varimax rotations were then performed on the first five and ten factors resulting from the analysis. The ten-factor rotation accounted for 76 percent of the matrix variance, but also resulted in several factors that were uninterpretable. The five-factor rotation accounted for 57 percent of the matrix variance and yielded readily identifiable factors with a logical structure. The factors were named by assigning each variable to the factor on which it had its highest loading. If a variable loaded highly and nearly equally on more than one factor, it was carried on each. This multiple loading usually occurred when a variable loaded positively on one factor and negatively on another.

Tables 7 through 11 present the variables and loadings contributing to each of the five resultant factors. These five factors are named self-regulatory, child-initiated interactions, programmed/academic, expressive, and child self-learning. For each classroom in the observation subsample, scores were computed on the five factors, and a profile of the classroom was created.

TABLE 7

FACTOR 1, SELF-REGULATORY

VARIABLE DESCRIPTION	LOADING
INDEPENDENT CHILD ACTIVITIES	+.87
WIDE VARIETY OF ACTIVITIES	+.87
CHILD SELF-EXPRESSION	+.72
CHILD INFORMING SELF WITH OBJECTS	+.60
G--BLOCKS, TRUCKS, DOLLS, DRESS-UP	+.58
F--ARTS, CRAFTS, SEWING, COOKING, POUNDING, SAWING	+.46
ADULT WITH ONE OR TWO CHILDREN IN ALL ACTIVITIES	+.45
ADULT NEGATIVE AFFECT	-.38
ADULT ASKING CHILD DIRECT QUESTION	-.37
C--ARITHMETIC, NUMBERS, MATHEMATICS, ALPHABET, READING, LANGUAGE DEVELOPMENT	-.36
E--GAMES, PUZZLES	+.35
DIRECT QUESTION FOLLOWED BY CHILD RESPONSE	-.35
CHILD QUESTIONING ADULT	+.34

TOGETHER THESE VARIABLES INDICATE A PATTERN OF CHILDREN WORKING BY THEMSELVES AND IN CONTROL OF WHAT THEY ARE DOING AT THE MOMENT.

TABLE 8

FACTOR 2, CHILD-INITIATED INTERACTIONS

VARIABLE DESCRIPTION	LOADING
ADULT INFORMING CHILD	-.74
ADULT WITHOUT CHILDREN	+.66
ADULT INFORMING CHILD SYMBOLICALLY	-.64
ADULT ACKNOWLEDGMENT TO CHILD	+.62
ADULT POSITIVE CORRECTIVE FEEDBACK	+.62
ADULT COMMUNICATION FOCUS--ONE OR TWO CHILDREN	+.61
ADULT NEGATIVE CORRECTIVE FEEDBACK	+.57
CHILD QUESTIONING ADULT	+.52
ALL NEGATIVE AFFECT	+.41
ADULT NEGATIVE AFFECT	+.37
ADULT COMMUNICATION FOCUS--LARGE GROUP	-.36
CHILD RESPONSE FOLLOWED BY ADULT FEEDBACK	+.35
F--ARTS, CRAFTS, SEWING, COOKING, POUNDING, SAWING	-.32
CHILD NEGATIVE AFFECT	+.30

THE POSITIVE VARIABLES ON THIS FACTOR REPRESENT CHILDREN ASKING A QUESTION THAT INITIATES AN INTERACTION WITH A LONE ADULT. THE ADULT THEN PROVIDES SOME FORM OF FEEDBACK. THE NEGATIVE LOADINGS SHOW ADULTS INITIATING AN INTERACTION BY INFORMING LARGE GROUPS. THIS IMPLIES THAT THE FACTOR STATEMENT HAS ADULTS ALONE, CHILDREN INITIATING, AND ADULTS RESPONDING.

TABLE 9

FACTOR 3, PROGRAMMED/ACADEMIC

VARIABLE DESCRIPTION	LOADING
ADULT WITH SMALL GROUPS IN ACADEMIC ACTIVITIES	+.86
C--ARITHMETIC, NUMBERS, MATHEMATICS, READING, ALPHABET, LANGUAGE DEVELOPMENT	+.75
AIDE PARTICIPATING IN ACADEMIC ACTIVITIES	+.75
B--GROUP TIME, STORY, SINGING, DANCING	-.71
ADULT COMMUNICATION FOCUS--SMALL GROUP	+.70
ACADEMIC ACTIVITIES	+.66
ADULT PRAISE	+.64
CHILD RESPONSE FOLLOWED BY ADULT FEEDBACK	+.57
ADULT ASKING CHILD A DIRECT QUESTION	+.55
DIRECT QUESTION FOLLOWED BY CHILD RESPONSE	+.52
ADULT COMMUNICATION FOCUS--LARGE GROUP	-.52
A--LUNCH, SNACK	-.48
ADULT WITHOUT CHILDREN	+.46
ADULT COMMUNICATION FOCUS--ONE OR TWO CHILDREN	+.40
ADULT NEGATIVE AFFECT	-.37
ADULT NEGATIVE CORRECTIVE FEEDBACK	-.36
CHILD SELF-EXPRESSION	-.35

FACTOR 3 DESCRIBES A SCENE WHEREIN ADULTS "TEACH" READING, MATHEMATICS, OR SOCIAL STUDIES USUALLY WITH SMALL GROUPS USING POSITIVE REINFORCEMENT FOR RESPONSES TO DIRECT QUESTIONS.

TABLE 10

FACTOR 4, EXPRESSIVE

VARIABLE DESCRIPTION	LOADING
CHILD TO ADULT POSITIVE AFFECT	+.81
ALL NEGATIVE AFFECT	+.70
CHILD NEGATIVE AFFECT	+.69
CHILD POSITIVE AFFECT	+.65
ADULT TO CHILD POSITIVE AFFECT	+.63
ALL POSITIVE AFFECT	+.61
DIRECT QUESTION FOLLOWED BY CHILD RESPONSE	-.57
ADULT ASKING CHILD A DIRECT QUESTION	-.57
ADULT ASKING CHILD THOUGHT PROVOKING QUESTIONS	+.49
CHILD INFORMING ANOTHER CHILD	+.47
ADULT NEGATIVE AFFECT	+.41
CHILD RESPONSE FOLLOWED BY ADULT FEEDBACK	-.37
ADULT INFORMING CHILD WITH CONCRETE OBJECTS	+.34
CHILD QUESTIONING ADULT	+.32

FACTOR 4 IS CALLED "EXPRESSIVE" AND REFLECTS BOTH POSITIVE AND NEGATIVE OVERT EXPRESSIVENESS ON THE PART OF ADULTS AND CHILDREN. EXPRESSIVENESS IS NEGATIVELY RELATED TO AN ADULT'S DIRECT QUESTIONING AND CHILDREN RESPONDING TO ADULT'S DIRECT QUESTIONS.

TABLE 11

FACTOR 5, CHILD SELF-LEARNING

VARIABLE DESCRIPTION	LOADING
ALL CHILD SELF-LEARNING	+.86
CHILD INFORMING SELF SYMBOLICALLY	+.81
ADULT COMMUNICATION FOCUS--SMALL GROUP	-.41
CHILD RESPONSE FOLLOWED BY ADULT FEEDBACK	-.39
ADULT PRAISE	-.38
ADULT WITHOUT CHILDREN	-.34

FACTOR 5 IS SIMPLY CALLED CHILD SELF-LEARNING AFTER ITS TWO POSITIVELY LOADED VARIABLES. AN EXAMPLE OF A CHILD INFORMING HIMSELF SYMBOLICALLY IS A CHILD READING OR WRITING BY HIMSELF.

Summary of Variables by Level of Evaluation Focus

Table 12 presents a summary of these variables within the context of the evaluation model for each separate evaluation focus. This summary displays the integration of data in terms of evaluation variables and will serve as a model for presentation and discussion of results in the sections to follow.

TABLE 12

BASIC EVALUATION VARIABLES

INPUT AND CONTROL VARIABLES	OUTCOME VARIABLES	PROJECT AND PROCESS VARIABLES
PART I CHILD EVALUATION DATA		
NO. OF CLASSROOMS	OVERALL ACHIEVEMENT	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM		
QUANT. PRESCORE	AFFECT	REGION
COG. PROCESS PRESCORE		
READING PRESCORE	ATTENDANCE	DISTANCE TO NEAREST SMSA
LANGUAGE PRESCORE		
AFFECT PRESCORE	WRAT TOTAL	SIZE OF NEAREST SMSA
AGE (JUNE'71)		PERCENT NONWHITE
% CLASSROOM MALE	QUANTITATIVE SKILL	PROJECT SIZE (PUPILS)
% CLASSROOM BLACK		
% PRESCHOOL (OR NO. MOS.)	COGNITIVE PROCESSES	NO. PUPILS/PAC MEMBER
% PARENTS W/O HS DIPL.		FT PER-PUPIL EXPENDITURE
% PARENTS W SKILLED OCCUP.	READING SKILLS	
% PARENTS BLACK		
% PARENTS POVERTY ELIGIBLE	LANGUAGE ARTS	
% HEAD HOUSEHOLD EMPLOYED		
% HEAD HOUSEHOLD MALE		
PART II PARENT EVALUATION DATA		
NO. CLASSROOM GROUPS	PARENT-CHILD INTERACTION	CLASSROOM OBSERVATION FACTOR SCORES
AV. PARENTS/CLASSROOM GRP		
% W/O HIGH SCHOOL DIPLOMA	PARENT-SCHOOL INVOLVEMENT	
% W SKILLED OCCUP.		SELF REGULATORY
% POS EVAL OF CHILD LRNG	CHILD-ACADEMIC EXPECTATION	
% BLACK		CHILD-INITIATED INTERACTIONS
% REPORTING USE OF PRESCHOOL	SENSE OF CONTROL	
% POVERTY ELIGIBLE		
% HEAD HOUSEHOLD EMPLOYED		PROGRAMMED ACADEMIC
% HEAD HOUSEHOLD MALE		
		EXPRESSIVE
PART III TEACHER EVALUATION DATA		CHILD SELF-LEARNING
NO. OF CLASSROOMS		
JOB SATISF. RATING	PARENT-EDUCATOR IMAGE	
BOOK RESOURCE SCALE		
RACE (BLACK/NONBLACK)	PROFESSIONAL ACCEPTANCE OF METHOD	
IDENT. W. COMMUNITY		
NO. OF HELPERS		
ABLE TO CHOOSE ASSIGNMENT		
TRAINING AND TEACHER EXPERIENCE		

Analysis Methodology

In this section we describe the method and procedures used to analyze the data for evidence of program impacts. Included are statements of the formal hypotheses to be tested, a description of the statistical model and procedures for testing these hypotheses (including attention to underlying assumptions), and discussions of interpretive difficulties and caveats associated with the nature and scope of this interim evaluation sample.

Basic Evaluation Hypotheses

In the preceding sections we described the basic FT evaluation design, sample, and measurement program with respect to a set of explicit evaluation questions designed to determine the relative impact of the Follow Through program. These specific questions can be grouped as follows:

- General Impact--How effective is Follow Through as a method of improving life chances of participating children? What is its impact on parent and teacher behavior and attitudes? What is its impact on school and community reform?

- Specific Impact--What is the impact of specific program components, or "planned variations" of Follow Through on child, parent, teacher, school, and community characteristics?

The strategy adopted for evaluating Follow Through--that is, for answering the above questions--is to compare at various points in time children, parents, teachers, etc., who are participating in an FT program with those who are not. This basic treatment versus control logic enables assessment of impact at three levels of specificity--FT in general (overall effects), FT planned variations (sponsor effects), and project by project outcomes. Stated in the form of null hypotheses, these three levels of specificity of the evaluation question can be formed as follows:

(1) Overall--Other things being equal, the mean performance of FT pupils, parents, or teachers will not differ reliably from that of the NFT sample at each assessment point (1 year, 2 years) and as measured by the respective pupil, parent, and teacher outcome variables.

(2) Planned Variation--Other things being equal, the mean performance of pupils, parents, or teachers participating in a given Follow Through model (or group of models) will not differ reliably from that of the appropriate control group at each assessment point (1 year, 2 years) and as measured by the respective pupil, parent, and teacher outcome variables.

(3) Project Outcomes--Other things being equal, the mean performance of pupils, parents, or teachers participating in a given FT project (regardless of sponsor) will not differ reliably from that of the project control group at each assessment point and as measured by the respective pupil, parent, or teacher outcome variables.

Several properties of these hypotheses deserve consideration. First, three different evaluation perspectives are afforded by the three classes of hypotheses. The overall hypotheses represent FT as a national program of assistance and intervention and assess impact on this level (i.e., without specific regard for "planned variation"). This approach can be seen as asking the question, "On the average, is Follow Through as a national program of intervention producing measurable impact?" The sponsor, or planned variation, hypotheses ask slightly more specific versions of this question; that is, "Have at least some of the approaches or planned variations produced measurable impact?" or more specifically, "Have some FT projects produced measurable impact?"

Second, each level can be divided into several subhypotheses. Subhypotheses regarding pupil, parent, and teacher effects are straightforward. Subhypotheses regarding cumulative one-year and two-year effects can also be formulated. These are not rival hypotheses (i.e., one-year versus two-year) but, rather, correspond to assessment intervals and allow examination of patterns of change. Specifically, under these cumulative effects hypotheses, we ask the questions, "Does Follow Through produce a measurable impact after one year of implementation (overall, by sponsor, by project), after two years of implementation (overall, by sponsor, by project)?

Third, separate replications of the FT experiment are represented in the successive cohorts and in the separate grade level entries within cohorts. These characteristics of the design enable the formation and testing of several subhypotheses corresponding to program development or improvement with different subpopulations over time. For example, "Is the probability of first year effects greater for Cohort II than for Cohort I (i.e., indirect evidence of improved program implementation)? Does FT appear to produce more measurable impacts on K than on EF cohorts?"

And finally, contrasting first year effects of Cohort II-EF against second year effects for Cohort I-K constitutes a test of differential cumulative impact with developmental age held constant. In this interim analysis, this test can be applied only to pupils in the first grade and is equivalent to asking the question "Does FT have a greater impact on first grade pupils after two years (Cohort I-K sample) than after one year (Cohort II-EF sample) of participation and services?"

In summary the evaluation design, including the sampling plan and assessment schedule, provides a basis for analysis of Follow Through effects in a large variety of contexts. Comparison can be made at the overall, sponsor, and project levels; within cohort samples at varying grade levels and years of experience; and across cohort samples in terms of experience year, grade level, and both.

ANCOVA: The Method of Analysis

Analysis of covariance (ANCOVA) was the method chosen for integrating data from the various sources and performing tests of the major and subhypotheses. The specific ANCOVA model employed is a fixed effects, one-way design in which approaches (planned variations) are arranged as the treatment variables, and control variables are used as covariates. Furthermore, within each treatment group in the one-way design, the FT project samples and the corresponding NFT control groups are nested. This analysis design was implemented separately for pupil, parent, and teacher variables and for each cohort sample, grade stream, and assessment interval. Thus, 3 (pupil, parent, teacher) x 2 (Cohort I, II) x 2 (K, EF), or 12 independent analyses were performed on 1971 data, and 2 additional analyses were performed on the 1970 K and EF pupil data.* Analysis of teacher and parent variables was not performed on the 1970 Cohort I subset.

The units chosen for these ANCOVAS were classroom aggregated variables. Parallel analyses were also conducted on these classroom units in terms of sponsor and project level definitions of the treatment variable. Detailed discussions of issues and arguments leading to these analysis decisions are presented in Annex A of this report. Where available, relevant data also are presented. The interested reader is strongly urged to refer to Annex A for a more thorough explanation of our analysis methodology.

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*We recognize that the 1970 and the 1971 analyses on Cohort I data are not independent, since the measurement units of the 1970 analyses were a subset of those for 1971. However, a more complex repeated measures analysis was considered inappropriate because measures and classroom groupings changed from 1970 to 1971.

Analysis at the Sponsor Level--The one-way fixed effects analysis of variance-covariance design for assessing sponsor level effects is displayed as follows:

Treatment

SPONSOR A		SPONSOR B			SPONSOR X	
FT	NFT	FT	NFT		FT	NFT
				. . .		

Each cell in this design contains all the classroom aggregated observations, both dependent variables (DV's) and covariables, within a given grade stream and cohort and organizes these in terms of sponsors. Since this design collapses data across projects within sponsors, project descriptors are included as covariables to control for inter-project variability. This design constitutes an analysis on average sponsor effects within cohort and grade stream. To test the individual average effect for a given sponsor, a planned comparison (linear contrast) of the FT versus NFT cell (treatment level) is used.

The degrees of freedom for treatments, covariates, and error associated with each separate implementation of this analysis design (4 cohorts × 3 classes of DVs + 2 subset analyses = 14 analyses) are summarized in Table 13. The "total" entry in this table indicates the number of classrooms for which data were sufficiently complete to be included in the respective analysis. The "treatments" entry is one less than the number of cells and also one less than twice the number of sponsors included in the analysis (each sponsor contributes two "levels" of treatment: FT and NFT). Finally, the entry for covariates indicates the number of separate covariables used in the particular analysis.

TABLE 13

DEGREES OF FREEDOM FOR SPONSOR LEVEL ANCOVAS

SOURCE OF VARIANCE	PUPIL VARIABLES	PARENT VARIABLES	TEACHER VARIABLES
COHORT I-K, 2-YR			
TREATMENTS	23	23	21
COVARIATES	19	8	10
ERROR	313	297	221
TOTAL	356	329	253
COHORT I-E, 2-YR			
TREATMENTS	15	15	13
COVARIATES	18	8	10
ERROR	94	85	50
TOTAL	128	109	74
COHORT II-K, 1-YR			
TREATMENTS	13	11	7
COVARIATES	19	8	7
ERROR	44	52	4
TOTAL	77	72	19
COHORT II-E, 1-YR			
TREATMENTS	7	5	7
COVARIANTS	15	8	7
ERROR	8	10	12
TOTAL	31	24	27
COHORT I-K, 1-YR			
TREATMENTS	19		
COVARIATES	19		
ERROR	168		
TOTAL	207		
COHORT I-E, 1-YR			
TREATMENTS	11		
COVARIATES	17		
ERROR	47		
TOTAL	76		

Analysis at the Project Level--The one-way ANCOVA design for the project level analyses is formally identical to the sponsor design described above. The only distinction between the two is in the definition of "treatment"; in this case the individual project serves to define treatment. The structure of this analysis within a given grade stream and cohort is as follows:

Treatment

Project a		Project b			Project z	
FT	NFT	FT	NFT		FT	NFT
				. . .		

In this analysis design, projects are substituted for sponsors in defining the treatment variable. This design affords precise control over project variability and constitutes an analysis of average project effects. To test the effect of individual projects, planned comparisons of FT versus NFT within project were again used.

The degrees of freedom for treatments, covariates, and error for each of the 14 project level analyses are summarized in Table 14. Table 14 shows that the project analyses employ more treatment levels and fewer covariables than the sponsor analyses. Since projects containing fewer than two FT and two NFT classes were excluded from project analyses, totals for Sponsor and Project analyses occasionally differ. For several analyses--CII-K teacher; CII-EF pupil, parent, teacher, and CI-E (first year) pupil--the two designs were identical since the number of projects and sponsors were equal.

Finally, analyses of overall effects were conducted on the project analysis design. These analyses consisted of comparing the average of all FT versus all NFT treatments within a given ANCOVA.

All results of hypotheses tests were interpreted by means of 95 percent confidence intervals.

TABLE 14

DEGREES OF FREEDOM FOR PROJECT LEVEL ANCOVAS

SOURCE OF VARIANCE	PUPIL VARIABLES	PARENT VARIABLES	TEACHER VARIABLES
COHORT I-K, 2-YR			
TREATMENTS	55	51	41
COVARIATES	16	8	7
ERROR	258	236	146
TOTAL	330	296	195
COHORT I-E, 2-YR			
TREATMENTS	21	19	15
COVARIATES	16	8	7
ERROR	85	77	41
TOTAL	123	105	64
COHORT II-K, 1-YR			
TREATMENTS	15	13	7
COVARIATES	16	8	7
ERROR	19	24	4
TOTAL	51	46	19
COHORT II-E, 1-YR			
TREATMENTS	7	5	7
COVARIATES	15	8	7
ERROR	8	10	12
TOTAL	31	24	27
COHORT I-K, 1-YR			
TREATMENTS	23		
COVARIATES	15		
ERROR	113		
TOTAL	152		
COHORT I-E, 1-YR			
TREATMENTS	13		
COVARIATES	15		
ERROR	47		
TOTAL	76		

Guide to Interpretation of Results

Data tables that display input/control and outcome values in accordance with the analysis procedures described in the preceding sections are presented in the "Results" section. These tables were prepared by combining relevant data from separate analyses (pupil, parent, teacher) into single displays organized in terms of the planned comparisons previously described.

The individual project is the basic organizational unit for presentation of results. Separate results tables were prepared for each set of data analyzed. If more than one set of data was analyzed for a particular project (e.g., CI-K and CII-K) each is presented and discussed within the context of the project. Therefore, more than one data table is presented for some projects.

There are three categories of entries on individual project data tables--input/control variables, outcome variables, and project/process descriptors. Both input/control and outcome measures are summarized at the appropriate evaluation level--pupil (classroom averaged), parent (pupil-classroom averaged), and teacher. Depending on the measure, pupil and parent covariates are displayed as raw score averages or as percent averages. Teacher covariates are raw score averages on the respective variables.

Pupil outcomes are all presented as raw score averages. Parent and teacher outcomes are all presented as scale score averages, where the scale has a mean of 0.0 and a standard deviation of 1.0.

Project descriptors are presented once for each project, as raw scores on the respective variables. Classroom observation scores are presented as average factor scores for each of the five process dimensions.

Within each evaluation level (pupil, parent, and teacher), average values for the FT and NFT classes and the average FT/NFT differences are entered for each variable. These entries display the baseline, unadjusted outcome, and adjusted outcome subgroup averages and differences for each project sample. Standard errors for adjusted FT/NFT mean differences are also presented.

Significance tests for outcomes are presented in the form of 95 percent confidence intervals for the adjusted mean FT/NFT differences. Confidence intervals which do not show sign changes (+ to -) across the interval indicate significance. These intervals can be read as follows:

"with 95 percent probability, the true mean difference between FT and NFT on X measure is between (lower boundary) and (upper boundary) units." In general, if the algebraic sign preceding both confidence interval boundaries is positive, then the results shows significance in favor of FT. If both signs are negative, then the difference is significantly in favor of NFT. The exception is the attendance measure, which shows the average days absent during the preceding school year. Here negative differences favor FT (less absence).

Explanation of Entries in the Project Data Tables

Figure 4 shows the organization of the project level evaluation data as summarized in the project data tables. A complete project data table contains eight groups of entries. These groups, which are correspondingly numbered 1-8 in Figure 4 are the following:

(1) Pupil baseline*/control measures

(2) Parent control measures

(3) Teacher input/control measures

(4) Pupil outcomes*

(5) Parent outcomes

(6) Teacher outcomes

(7) Project descriptors

(8) Classroom observation factor scores.

The entries in the area of Figure 4 designated as "1" provide data on child baseline controls. The following are detailed descriptions of individual entries:

No. of classrooms--the number of classroom level aggregations of pupils for which data are sufficiently complete (≥ 90 percent) for analysis.

Average pupils/classroom--the average number of pupils who met the completeness of data requirement. Average classroom size represents the average frequency for which data on all measures are available. Frequencies vary considerably from measure to measure.

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*Refer to Table 5 or Annex B (Table B-2) for maximum scores on baseline and outcome measures at various grade levels and assessmemt points.

BASELINE CONTROL DATA			
VARIABLE	FT	NFT	DIFF
NO. OF CLASSROOMS	4	4	0
AVERAGE PUPILS/CLASSROOM	11.3	5.8	5.5
QUANT. PRESCORE	29.5	30.9	-1.4
COG. PROCESS PRESCORE	7.5	7.7	-0.2
READING PRESCORE	56.5	65.2	-8.7
LANGUAGE PRESCORE	12.6	14.1	-1.5
AFFECT PRESCORE	17.2	16.8	0.4
AGE (JUNE '71)	97.0	97.6	-0.6
% CLASSROOM MALE	64.9	60.0	4.9
% CLASSROOM BLACK	41.7	2.3	39.4
% PRESCHOOL (OR NO. MOS.) ①	84.5	38.3	46.2
% PARENTS W/O HS DIPL.	84.8	88.9	-4.1
% PARENTS W SKILLED OCCUP.	29.0	15.9	13.1
% PARENTS BLACK	41.3	3.7	37.6
% PARENTS POVERTY ELIGIBLE	49.8	42.6	7.2
% HEAD HOUSEHOLD EMPLOYED	81.5	68.5	13.0
% HEAD HOUSEHOLD MALE	84.7	75.9	8.8
NO. CLASSROOM GROUPS	4	4	0
AV. PARENTS/CLASSRM GRP	11.3	6.7	4.6
% W/O HIGH SCHOOL DIPLOMA	84.8	88.9	-4.1
% W SKILLED OCCUP.	29.0	15.9	13.1
% POS EVAL OF CHILD LRNG	62.1	41.7	20.4
% BLACK ②	41.3	3.7	37.6
% REPORTING USE OF PRESCHOOL	84.5	51.1	33.4
% POVERTY ELIGIBLE	49.8	42.6	7.2
% HEAD HOUSEHOLD EMPLOYED	81.3	68.5	13.0
% HEAD HOUSEHOLD MALE	84.7	75.9	8.8
NO. OF CLASSROOMS	3	2	1
JOB SATISF. RATING	1.5	1.7	-0.2
BOOK RESOURCE SCALE	4.7	2.0	2.7
RACE (BLACK/NONBLACK) ③	1.0	1.0	0
IDENT. W. COMMUNITY	0.3	1.5	-1.2
NO. OF HELPERS	1.3	0.5	0.8
ABLE TO CHOOSE ASSIGNMENT	1.0	1.5	-0.5
TRNG & TEACHER EXPER	4.0	5.5	-1.5

OUTCOME DATA				ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
PART I CHILD EVALUATION DATA									
OVERALL ACHIEVEMENT	109.6	139.1	-29.5	110.4	125.6	-15.2	11.84	-38.4	8.0
AFFECT	18.5	18.4	0.1	18.6	18.9	-0.3	0.77	-1.8	1.2
ATTENDANCE	10.8	10.1	0.7	10.0	9.9	0.1	3.92	-7.6	7.8
WRAT TOTAL	84.6	93.0	-8.4	85.8	89.7	-3.9	5.09	-13.9	6.1
QUANTITATIVE	34.6	40.3	-5.7	32.4	35.1	-2.7	3.56	-9.7	4.3
COGNITIVE PROCESSES				④					
READING SKILLS	55.8	79.4	-23.6	58.6	72.3	-13.7	7.86	-20.7	1.7
LANGUAGE ARTS	19.1	19.3	-0.2	19.2	18.0	1.2	2.36	-3.4	5.8
PART II PARENT EVALUATION DATA									
PARENT-CHILD INTERACT	.069	.278	-.209	.195	.589	-.394	.351	-1.08	.29
PARENT-SCHOOL INVOLVE	.354	.124	.230	.428	.494	-.066	.358	-.77	.64
				⑤					
CHILD ACADEMIC EXPECT	-.304	-.632	.328	-.013	.015	-.028	.353	-.72	.66
SENSE OF CONTROL	.430	-.614	1.04	.657	-.215	.872	.344	.20	1.55
PART III TEACHER EVALUATION DATA									
PARENT-EDUCATOR IMAGE	0.19	0.08	0.11	0.27	0.05	0.22	0.297	-.36	.80
				⑥					
PROFESSION. ACCEPT OF METHOD	1.67	1.50	0.17	1.94	1.57	0.37	0.445	-.50	1.24

PROCESS DATA

PROJECT DESCRIPTORS

REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA . .	20 MILES
SIZE OF NEAREST SMSA	119,000
PERCENT NONWHITE	5
PROJECT SIZE (PUPILS) . . .	357 ⑦
NO. PUPILS/PAC MEMBER . . .	7.9
FT PER-PUPIL EXPENDITURE . .	910

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.77	-.28
CHILD-INITIATED INTERACTIONS	.47	.64 ⑧
PROGRAMMED ACADEMIC . . .	-.12	-.30
EXPRESSIVE	-.37	-.61
CHILD SELF-LEARNING . . .	.98	.19

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*See "Guide for Interpretation of Results" for explanation of table entries.

FIGURE 4 ORGANIZATION OF PROJECT DATA TABLE

Quant. prescore--the raw score (number correct) on the baseline test (maximum varies across cohorts and grade streams).

Cog. Process prescore--the raw cognitive process prescore.

Reading prescore--the raw reading prescore.

Language prescore--the raw language prescore.

Affect prescore--the raw affect prescore.

Age (June '71)--the average age in months of pupils as of June, 1971.

% Classroom male--the percentage of boys in the classroom, averaged across classrooms.

% Classroom Black--the percentage of Blacks in the classroom, averaged across classrooms.

% Preschool--either: (a) the average percentage of pupils who had at least some preschool (CI only) or (b) the average number of months of preschool (CII only).

% Parents w/o HS diploma--the percentage of parents of pupils in the class who DO NOT have high school diplomas, averaged across classrooms.

% Parents w skilled occup.--the average percentage of parents of pupils in the class who have occupations classified as "skilled"--i.e., professional, clerical, manager, sales, craft, etc., but NOT service, laborer, operative, housewife, etc.

POVERTY DEFINITIONS

	NON-FARM FAMILY SIZE			FARM FAMILY SIZE		
DOLLAR INCOME	CERT. POOR	POSS. POOR	NOT POOR	CERT. POOR	POSS. POOR	NOT POOR
1,000	≥ 1	--	--	≥ 1	--	--
1,000-2,999	≥ 3	2	1	≥ 4	2-3	1
3,000-4,999	≥ 7	3-6	1-2	≥ 8	4-7	1-3
5,000-7,499	≥ 11	7-10	1-6	≥ 13	8-12	1-7
7,500-9,999	≥ 15	11-14	1-10	≥ 17	13-16	1-12
10,000+	≥ 19	15-18	1-14	≥ 21	17-20	1-16

% Parents Black--average percentage of pupil parents who are Black.

% Poverty eligible--average percentage meeting OEO poverty guidelines as shown in the preceding (page 84) tabulation.

% Head of household employed--the average percentage of heads of households who report they are currently employed (parent interview responses).

% Head household male--the average percentage of heads of households who are male.

The entries in the area of Figure 4 designated as "2" present control data on parents. The following are detailed descriptions of individual entries:

No. classroom units--number of parent groups of data, aggregated in terms of the corresponding pupils' classrooms.

Av. parents/classroom grp--average number of parents per unit meeting the completeness of data requirement. Average classroom group size represents the average frequency for which data on all measures are available. Frequencies vary considerably from measure to measure.

% w/o high school diploma--see child definitions.

% w skilled occup.--see child definitions.

% Pos. eval. of child lrng--satisfaction rating of parent ("very" to "not") with child's progress in school; percentage of "very satisfied" responses.

% Black--see child definition.

% Reporting use of preschool--percentage stating their FT/NFT child participated in some preschool program.

% Poverty eligible--see child definition.

% Head household employed--see child definition.

% Head household male--see child definition.

The entries in the area of Figure 4 designated as "3" display input data on teachers. The following are detailed descriptions of individual entries:

No. of classrooms--number of classrooms for which data on teacher variables are sufficiently complete.

Job satisf. rating--the average scaled satisfaction response (3 = very satisfied, 2 = satisfied, 1 = dissatisfied) regarding working conditions, i.e., equipment, supplies, classroom space, schedule, salary, and planning time.

Book Resource scale--the number of book and library facilities available to the students--classroom, take home, central library, etc. (maximum score = 6).

Race (Black/non-Black)--Black = 1; non-Black = 0.[*]

Ident. w community--the extent to which the teacher is both a longtime member of the community and a resident of a neighborhood similar to that of the pupils (maximum score = 2).

No. of helpers--the minimum number of helpers (aides or volunteers) utilized in the class.

Able to choose assignment--the extent to which the teacher was able to choose her current school and classroom teaching assignment (2 = teacher's own choice; 1 = at request of other; 0 = assigned, no choice--each for school and classroom assignment).

Trng & teacher experience--an aggregate training and experience variable indicating the extent of formal education, degrees held, specific course completions, certification, years of experience, grade levels taught, and tenure of the teacher (maximum score = 12 points).

The entries in the area of Figure 4 designated as "4" display outcome data on pupils. The following are detailed descriptions of individual entries:

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[*] Cohort II teacher ethnicity coding is reversed: Black = 0, non-Black = 1.

Overall achievement--the raw score sum of correct responses to all cognitive test battery items.

Affect--the scaled sum of seven responses to the attitude inventory (3 = happy, 1 = sad; min. = 7, max. = 21).

Attendance--the average number of days absent from class in the 1970-1971 school year.

WRAT--the raw score sum of correct responses to the WRAT.

Quantitative--the raw score sum of correct responses.

Cognitive processes--the raw score sum of correct responses.

Reading skills--the raw score sum of correct responses.

Language arts--the raw score sum of correct responses.

Two entries are made for the subgroups on each measure. The outcome entry shows the actual or unadjusted posttest averages for FT and NFT subgroups on each measure. The adjusted outcome entries show these values after regression for differences on covariables (i.e., differences on baseline/control averages).

The entries in the area of Figure 4 are designated as "5" present outcome data on parents. The following are detailed descriptions of individual entries:

Parent/child interact--the extent to which parents report they actively interact with their children in such activities as talking with their children, taking their children on trips, helping their children with school work, reading to them, accepting assistance from them, and acknowledging their progress in school.

Parent/school involve--the extent to which parents report they are actively participating in various school-related activities, such as classroom visits, volunteer assistance, parent/school meetings, external contacts with school personnel.

Child academic expect--the extent to which the parent reports satisfaction with child's progress and optimism regarding the child's future, both academic and nonacademic (e.g., what are the child's expected grades, chances of getting a good job, chances of going on to college?).

Sense of control--the extent to which the parent reports a sense of concern and control over school procedures, educational reforms, and school awareness of and responsiveness to parent and community desires and needs.

These entries are all expressed as standardized ($M = 0$, $SD = 1$) scale values and are displayed in unadjusted and adjusted forms.

The entries in the area of Figure 4 designated as "6" present outcome data on teachers. The following are detailed descriptions of individual entries:

Parent-educator image--the extent to which teachers reported they felt it essential to "get together with parents outside of the classroom" for purposes of:

- Improving children's learning
- Improving classroom teaching
- Learning parent's views on teaching
- Improving school services to parents
- Improving school services to children
- Improving school services to community
- Parental understanding of school program.

Professional accept of method--the extent to which the teacher reports she would not prefer to adopt some teaching approach other than the one she is currently using.

Like the parent outcomes, teacher outcomes are expressed as standardized scale scores and are shown in adjusted and unadjusted forms.

The entries in the area of Figure 4 designated as "7" describe the project. The following are detailed descriptions of individual entries.

Region--geographic location of project

Distance to nearest SMSA--within SMSA; 20 miles from nearest SMSA; 30 to 40 miles from nearest SMSA; 50-70 miles from nearest SMSA; or 75 to 120 miles from nearest SMSA.

Size of nearest SMSA--1970 population of nearest SMSA for those communities not within a SMSA.

Percent nonwhite--percent of community population that consists of minority group members.

Project size (pupils)--number of participating pupils as projected in the 1970-71 project application.

No. pupils/PAC member--projected 1970-71 enrollment divided by the size of PAC as reported in 1970-71 membership listing.

FT per pupil expenditure--total anticipated funds supplementing district maintenance of effort (sometimes includes Title I funding) divided by projected enrollment.

The entries in the area of Figure 4 designated as "8" give classroom observation factor scores. The following are detailed descriptions of individual entries:

Self-regulatory--children working independently on activities not strictly academic.

Child-initiated interactions--children initiating interactions and receiving positive or negative feedback from adults.

Programmed academic--adults teaching small groups of children by highly structured question-response-reinforcement interactions.

Expressive--positive and negative affect expressed by both children and adults.

Child self-learning--children working alone with books or seat-work materials.

Section IV

RESULTS

Section IV

RESULTS

Introduction

This section is divided into the following three parts:

(1) Evidence of results at the project level presented on a sponsor by sponsor basis

(2) Overall results presented on a cohort basis

(3) Independent evidence of FT planned variations.

Part 1 presents the results and interpretations of individual project outcomes, both CI and CII. Because of the quantity and complexity of these results, several steps are followed to organize and simplify the presentation.

First, all results are organized in terms of individual projects as in the interpretive guide. These project-level results are further grouped by sponsor. The reasons for this organization of the interim results are the following:

- The objective of this interim evaluation is not to contrast each approach or planned variation to others, but to assess the impact of each approach on pupils, parents, and teachers by comparing their development with the development of NFT comparison.
- Organization of impact evidence on the basis of planned variations allows comprehensive evaluation of how outcomes compare with the goals of the specific approach and how they are related to the characteristics of that approach.

The presentation of the results at the project level is organized as follows:

(1) A comprehensive description of the planned variation or approach, which was produced by SRI in collaboration with the sponsors, is presented. This description of the approach presents the sponsor's intended goals; it does not necessarily describe what actually happened.

(2) The results of individual CI and CII projects that employed this approach and for which interim data have been analyzed are presented. In general, the sequence of presentation is from Cohort I to Cohort II samples (i.e., two-year results to one-year results). Also, first-year (Spring 1970) results of Cohort I are compared with the corresponding second-year results (Spring 1971) when both are available and, with Cohort II first-year results, when they are available.

(3) A summary of results is presented for the sponsor. This summary includes an outline of what we believe to be the salient features of the planned variation (objectives, curriculum emphases, parent component). The results of sponsor level analyses are included only if two or more projects at a particular cohort and grade stream are present. Separate sponsor-level analyses for individual projects are redundant and, therefore, are not included in the summary.

Part 2 of this section presents summary tables and discussions of evidence of overall effects at the cohort level. In this presentation, we attempt to show how results are related to the quality of the matching of comparison groups with FT groups. These interpretations and evaluations are informal and descriptive.

Part 3 documents the extent to which FT planned variations currently exist. These evaluations are based directly on analysis of classroom observation variables and factors across projects and cohorts.

Part 1

RESULTS FOR EACH PROJECT BY SPONSOR

RESPONSIVE EDUCATIONAL PROGRAM
Far West Laboratory for Educational Research and Development

Sponsor's Intended Approach

Learning activities that are self-rewarding (autotelic) and an environment structured to be responsive to the individual child's needs, culture, and interests are the main principles in this model. The autotelic principle states that the best way for a child to learn is for him to be in an environment in which he can try things out, risk, guess, ask questions, and make discoveries without serious psychological consequences. Autotelic activities include learning activities that help the child develop a skill, learn a concept, or acquire an attitude that can be usefully applied in some other endeavor.

This sponsor believes that rewards are intrinsic within an activity and that the child gets feedback from physical materials as well as human interactions. Thus, he need not depend solely on the authority of the teacher for rewards, punishments, or feedback. The child becomes self-directed and develops inner controls.

The goals of the model are for the child to develop his intellectual abilities and to develop a healthy self-concept. A healthy self-concept allows the child to accept himself and his culture, to make realistic estimates of his own abilities and limitations, and to have confidence in his own capacity to succeed. Such a child is willing to take risks, learns from his mistakes, and feels safe in expressing his feelings. He learns to apply all his resources--emotional, physical and intellectual--to the process of solving problems within his environment.

In the Responsive Model classroom the child is free to explore within a carefully controlled environment containing learning centers and a variety of games and activities. There is freedom to choose activities within already established limits. What he chooses to do is more likely to become important to him, to stimulate affective involvement, and to pose real problems. The child searches for solutions to problems in his own way using a variety of resources, both physical and human. The teachers guide his discovery of solutions. The child finds out if his solutions work. Solutions he discovers often fit together and lead to other discoveries. The child's reward is what he gains from the entire experience.

Learning sequences have been developed for the model, but each child may work at his own pace. There are no constraints to master given lesson content by a given time. It is assumed in the model that no single theory of learning can account for all the ways in which children learn. What is considered essential is that a variety of educational alternatives be available to build on whatever background, cultural influence, or life style the child brings to school.

The sponsor of this model trains a person from the local community to act as Program Advisor. The Program Advisor conducts inservice training for all staff and parent groups and is responsible for carrying the model's program into the classroom. One aspect of the training includes developing career-directed jobs for parents as teacher assistants, typing booth attendants, and the like. The training program is the first concern in evaluating the model overall. An attempt is made to determine how effective the training program is in producing the changes in teacher behavior required to implement the model and whether the changed behavior indeed affects the growth of children toward the self-concept and intellectual objectives of the program.

Since the approach taken by the Responsive Model places equal responsibility for the child's education on the home, particularly heavy emphasis is placed on parent involvement. Parents are offered training during which they are familiarized with the program and trained to pursue its objectives in the home. A game and toy library is available for parent use, and it includes filmstrips and audio tapes that demonstrate how the toys and games should be used. The sponsor also offers a course to teacher-librarians so they can further assist parents in the application of program materials.

In addition to the parents trained specifically for employment in the project, parents in general are invited to participate in classroom activity on a volunteer basis. This gives them the opportunity to become aware of the kinds of adult-child interactions that contribute to the child's success in school and to become familiar with the principles and the activities of the program. The purpose of the carefully planned parent involvement demonstrated by this model is to train parents for the leadership and policy-making roles the sponsor feels they should assume in the education of their children.

Individual Project Results

Seven samples from three different projects sponsored by Far-West Laboratory for Educational Research and Development (FW) were included in the analysis of the interim effects. The distribution of these evaluation samples in terms of cohort, outcome, and project is as follows:

Cohort	First-year Effects	Second-year Effects
IK	(project b)	(projects a, b, & c)
IIK	(projects a, b, & c)	

Project FW(c)

Project FW(c) is a relatively small, nearly all white project, located some distance from a relatively small (95,000) New England city. The anticipated per pupil Follow Through expenditure in this project was $634, and there was one PAC member, on the average, for each 13.7 pupils. Two separate samples were analyzed for this project, a Cohort I-K second-year sample and a Cohort II-K, one-year sample.

The results of the Cohort I, two-year analysis are presented in Table 15. This analysis was based on a sample of four Follow Through and three non-Follow Through classrooms.

These sets of classrooms were only moderately similar. NFT classrooms averaged consistently higher than FT classrooms on the baseline measures and were more than 10 points above the FT classrooms on the reading prescore. As usual, the Follow Through classrooms had a higher proportion of preschool experience but appeared to have families quite different from those of the non-Follow Through pupils. Specifically, FT parents tended to have substantially less education, were more likely to be unemployed, were in lower occupational categories, were poverty eligible, and had fewer male heads of household than NFT families. Teachers, on the other hand, appeared somewhat better matched on the input variables. For example, the FT and NFT samples differ only in the number of helpers and the relative experience of teachers.

The analysis of covariance on pupil outcomes showed a significant difference in favor of Follow Through on the quantitative skills measure. Other test measures failed to reveal significance, but generally showed differences in favor of the Follow Through sample. The parent outcomes and teacher outcomes presented in Table 15 indicate that no other results reach significance for this sample.

The Cohort II first-year results for this project are summarized in Table 16. The baseline averages for these three FT and two NFT classrooms indicate that the comparison group match is only slighly better that that of the Cohort I sample in Project FW(c). The preschool averages for the two groups were approximately the same except for "affect," in which FT was substantially higher than NFT. However, in the NFT classrooms there were considerably more boys than girls, whereas in the FT classroom there were about

TABLE 15

PROJECT DATA TABLE--FAR WEST LABORATORY PROJECT C, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	4	3	1	OVERALL ACHIEVEMENT	139.1	149.3	-10.2	128.4	118.6	9.8	10.04	-9.9	29.5	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	9.8	5.7	4.1											
QUANT. PRESCORE	21.7	27.1	-5.4	AFFECT	18.5	18.0	0.5	18.8	17.6	1.2	1.06	-.9	3.3	REGION . . . . NEW ENGLAND
COG. PROCESS PRESCORE	6.0	7.9	-1.9											
READING PRESCORE	40.1	50.2	-10.1	ATTENDANCE	13.1	13.1	0	10.5	10.8	-0.3	3.29	-6.7	6.1	DISTANCE TO NEAREST SMSA . . 50-70 MILES
LANGUAGE PRESCORE	11.6	13.7	-2.1											
AFFECT PRESCORE	15.8	16.5	-0.7	WRAT TOTAL	79.6	85.0	-5.4	76.7	72.8	3.9	5.42	-6.7	14.5	SIZE OF NEAREST SMSA 95,000
AGE (JUNE '71)	86.8	86.1	0.7											
% CLASSROOM MALE	47.3	40.5	6.8	QUANTITATIVE	42.8	42.6	0.2	38.7	32.2	6.5	3.22	.3	12.8	PERCENT NONWHITE 1
% CLASSROOM BLACK	0	0	0											
% PRESCHOOL (OR NO. MOS.)	87.5	56.2	31.3	COGNITIVE PROCESSES	7.7	8.1	-0.4	7.0	6.9	0.1	0.60	-1.1	1.3	PROJECT SIZE (PUPILS) . . . 276
% PARENTS W/O HS DIPL.	54.9	22.6	32.3											
% PARENTS W SKILLED OCCUP.	40.5	76.6	-36.1	READING SKILLS	56.5	64.6	-8.1	53.3	53.3	0	4.98	-9.8	9.8	NO. PUPILS/PAC MEMBER . . . 13.7
% PARENTS BLACK	0	0	0											
% PARENTS POVERTY ELIGIBLE	43.8	9.5	34.3	LANGUAGE ARTS	32.1	34.0	-1.9	29.4	26.1	3.3	2.76	-2.1	8.7	FT PER-PUPIL EXPENDITURE . . 634
% HEAD HOUSEHOLD EMPLOYED	89.5	95.3	-5.8											
% HEAD HOUSEHOLD MALE	74.6	100.0	-25.4											
				PART II PARENT EVALUATION DATA										CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT
NO. CLASSROOM GROUPS	4	3	1											
AV. PARENTS/CLASSRM GRP	10.0	5.7	4.3	PARENT-CHILD INTERACT	-.064	.484	-.548	.063	.350	-.287	.331	-.94	.36	
% W/O HIGH SCHOOL DIPLOMA	54.9	22.6	32.3											
% W SKILLED OCCUP.	40.5	76.6	-36.1											
% POS EVAL OF CHILD LRNG	70.8	58.3	12.5	PARENT-SCHOOL INVOLVE	.127	.224	-.097	.253	.344	-.091	.448	-.97	.79	
% BLACK	0	0	0											
% REPORTING USE OF PRESCHOOL	87.5	56.8	30.7											
% POVERTY ELIGIBLE	43.8	9.5	34.3	CHILD ACADEMIC EXPECT	-.440	.041	-.481	-.989	-.189	-.800	.465	-1.71	.11	
% HEAD HOUSEHOLD EMPLOYED	89.5	95.3	5.8											
% HEAD HOUSEHOLD MALE	74.6	100.0	-25.4	SENSE OF CONTROL	.295	.029	.266	.511	.396	.115	.440	-.75	.98	
				PART III TEACHER EVALUATION DATA										
NO. OF CLASSROOMS	3	2	1											
JOB SATISF. RATING	1.7	2.0	-0.3	PARENT-EDUCATOR IMAGE	0.29	0.43	-0.14	0.27	0.50	-0.23	0.232	-.68	.22	
BOOK RESOURCE SCALE	4.0	4.5	-0.5											
RACE (BLACK/NONBLACK)	1.0	1.0	0											
IDENT. W. COMMUNITY	0.7	0.5	0.2	PROFESSION. ACCEPT OF METHOD	1.67	1.50	0.17	1.83	1.45	0.38	0.324	-.26	1.02	
NO. OF HELPERS	1.7	0.5	1.2											
ABLE TO CHOOSE ASSIGNMENT	2.0	1.5	0.5											
TRNG & TEACHER EXPER	5.0	6.0	-1.0											

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 16

PROJECT DATA TABLE--FAR WEST LABORATORY PROJECT C, COHORT II, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1970-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						
												CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	3	2	1	OVERALL ACHIEVEMENT	111.6	104.4	7.2	122.2	121.8	10.4	10.75	-10.7	31.5	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	8	--	--											
QUANT. PRESCORE	21.8	21.2	0.6	AFFECT	17.2	16.6	0.6	17.9	18.5	-0.6	1.56	-3.7	2.5	REGION . . . . NEW ENGLAND
COG. PROCESS PRESCORE	6.4	5.1	1.3											
READING PRESCORE	31.4	33.4	-2.0	ATTENDANCE	17.0	8.8	8.2	18.6	16.7	1.9	5.12	-8.1	11.9	DISTANCE TO NEAREST SMSA . . 50-70 MILES
LANGUAGE PRESCORE	17.8	16.2	1.6											
AFFECT PRESCORE	17.0	12.5	4.5	WRAT TOTAL	48.9	48.2	0.7	61.9	63.7	-1.8	7.50	-16.5	12.9	SIZE OF NEAREST SMSA 95,000
AGE (JUNE '71)	74.5	73.9	0.6											
% CLASSROOM MALE	44.5	80.0	-35.5	QUANTITATIVE	29.4	27.8	1.6	37.6	34.6	3.0	3.13	-3.1	9.1	PERCENT NONWHITE 1
% CLASSROOM BLACK	0	0	0											
% PRESCHOOL (OR NO. MOS.)	7.7	4.0	3.7	COGNITIVE PROCESSES	8.5	7.6	0.9	10.3	7.7	2.6	0.68	1.3	3.9	PROJECT SIZE (PUPILS) . . . 276
% PARENTS W/O HS DIPL.	36.5	10.0	26.5											
% PARENTS W SKILLED OCCUP.	58.4	80.0	-21.6	READING SKILLS	54.6	51.2	3.4	66.4	63.3	3.1	6.98	-10.8	16.8	NO. PUPILS/PAC MEMBER . . . 13.7
% PARENTS BLACK	0	0	0											
% PARENTS POVERTY ELIGIBLE	19.6	0	19.6	LANGUAGE ARTS	19.1	17.8	1.3	19.1	17.2	1.9	1.39	-1.2	5.0	FT PER-PUPIL EXPENDITURE . . 634
% HEAD HOUSEHOLD EMPLOYED	80.6	90.0	-9.4											
% HEAD HOUSEHOLD MALE	82.4	100.0	-17.6											
				PART II PARENT EVALUATION DATA										CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT
NO. CLASSROOM GROUPS	3	2	1	PARENT-CHILD INTERACT	-.060	-.036	-.0[illegible]	.480	.530	-.050	.381	-.80	.70	
AV. PARENTS/CLASSRM GRP	20.0	9.5	10.5											
% W/O HIGH SCHOOL DIPLOMA	36.5	10.0	26.5	PARENT-SCHOOL INVOLVE	.126	.676	-.550	-.116	.507	-.623	.479	-1.56	.32	
% W SKILLED OCCUP.	58.4	80.0	-21.6											
% POS EVAL OF CHILD LANG	71.8	60.0	11.8	CHILD ACADEMIC EXPECT	-.229	.136	-.365	-.239	.303	-.542	.380	-1.2	.16	
% BLACK	0	0	0											
% REPORTING USE OF PRESCHOOL	96.2	65.8	30.4	SENSE OF CONTROL	.306	-.079	.385	.371	.144	.227	.510	-.77	1.23	
% POVERTY ELIGIBLE	19.6	0	19.6											
% HEAD HOUSEHOLD EMPLOYED	80.6	90.0	-9.4											
% HEAD HOUSEHOLD MALE	82.4	100.0	-17.6											
				PART III TEACHER EVALUATION DATA										
NO. OF CLASSROOMS	2	2	0	PARENT-EDUCATOR										
JOB SATISF. RATING	2.5	1.8	0.7	IMAGE	0.58	0.29	0.29	0.72	0.51	0.21	0.278	-.33	.75	
BOOK RESOURCE SCALE	4.0	3.5	0.5											
RACE (BLACK/NONBLACK)	1.0	1.0	0	PROFESSION. ACCEPT										
IDENT. W. COMMUNITY	1.5	0.5	1.0	OF METHOD	2.00	1.50	0.50	2.46	1.37	1.09	0.884	-.64	2.82	
NO. OF HELPERS	1.5	1.0	0.5											
ABLE TO CHOOSE ASSIGNMENT	2.0	3.0	-1.0											
TRNG & TEACHER EXPER	3.5	4.5	-1.0											

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*See "Guide for Interpretation of Results" for explanation of table entries.

the same number of boys and girls. In addition, the FT parents were less likely to have a high school education or be employed in a skilled occupation. The head of a FT household was less apt to be employed and less apt to be male than the head of an NFT household. Nearly 20 percent of the FT families were poverty eligible under the OEO criteria, whereas none of the NFT families were. Teachers in the two samples were moderately comparable. FT teachers appeared more satisfied with their jobs, had more book resources, were better integrated in the communities in which they taught, and had more helpers than NFT teachers. However, FT teachers reported less freedom in choosing assignments and were less experienced than NFT teachers.

Analysis of pupil outcome measures in terms of these background differences revealed a significant FT superiority only in measures of cognitive processes. Outcomes of parent and teacher measures failed to show significant differences between FT and NFT groups.

In summary, the only significant differences between FT and NFT groups in Project FW(c) were the superiority in quantitative skills of the FT group in the Cohort I, second-year sample and the superiority in cognitive processes of the FT group in the Cohort II, first-year sample.

Project FW(b)

Project FW(b) is a moderately large project of 720 pupils, primarily white, located within a city of 138,000 in the west north central region. The anticipated per pupil expenditure in this project was $606, and, on the average, there were 19 pupils per PAC member.

Analyses were performed on three sets of data for Project FW(b), a Cohort I-K, second-year effects analysis, a Cohort I-K, first-year effects subset, and a Cohort I' K, first-year effects analysis. Both the Cohort I and the Cohort II classrooms were included in the classroom observation sample.

The results of the two-year effects analysis for Project FW(b) are summarized in Table 17. The six FT and the six NFT classrooms participating in this analysis were fairly well matched on pupil and parent variables. Substantial differences between FT and NFT groups were noted only in preschool experience and parents' evaluation of the pupils' academic progress. Parents in both samples were moderately well educated and were employed at skilled occupations; less than half the families are poverty eligible, and more than three quarters of the family heads are males or employed or both. The teachers were also relatively well matched, differing noticeably only in number of helpers and relative training and experience.

TABLE 17

PROJECT DATA TABLE--FAR WEST LABORATORY PROJECT B, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	6	6	0	OVERALL ACHIEVEMENT	149.7	149.4	0.3	133.8	128.3	5.5	7.51	-9.2	20.2
AVERAGE PUPILS/CLASSROOM	12.8	9.0	3.8										
QUANT. PRESCORE	23.4	25.5	-2.1	AFFECT	19.3	18.6	0.7	19.0	18.2	0.8	0.79	-.7	2.3
COG‸ PROCESS PRESCORE	5.9	6.5	-0.6										
READING PRESCORE	44.1	40.4	3.7	ATTENDANCE	8.1	8.6	-0.5	4.9	6.6	-1.7	2.46	-6.5	3.1
LANGUAGE PRESCORE	11.7	12.1	-0.4										
AFFECT PRESCORE	17.4	17.4	0	WRAT TOTAL	83.9	84.4	-0.5	78.5	76.9	1.6	4.06	-6.4	9.6
AGE (JUNE '71)	85.9	86.5	-0.6										
% CLASSROOM MALE	51.5	61.1	-9.6	QUANTITATIVE	44.9	45.8	-0.9	38.4	37.5	0.9	2.41	-3.8	5.6
% CLASSROOM BLACK	0	2.6	-2.6										
% PRESCHOOL (OR NO. MOS.)	46.7	27.1	19.6	COGNITIVE PROCESSES	7.7	7.6	0.1	6.9	6.6	0.3	0.45	-.6	1.2
% PARENTS W/O HS DIPL.	34.1	26.7	7.4										
% PARENTS W SKILLED OCCUP.	46.7	55.4	-8.7	READING SKILLS	64.0	63.6	0.4	58.8	56.8	2.0	3.72	-5.3	9.3
% PARENTS BLACK	0	0	0										
% PARENTS POVERTY ELIGIBLE	45.5	32.0	13.5	LANGUAGE ARTS	33.1	32.4	0.7	29.4	27.1	2.3	2.07	-1.8	6.4
% HEAD HOUSEHOLD EMPLOYED	73.9	88.7	-14.8										
% HEAD HOUSEHOLD MALE	76.4	81.1	-4.7										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	6	6	0	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	10.3	7.5	2.8	INTERACT	-.191	.117	-.308	-.151	-.004	-.147	.247	-.63	.34
% W/O HIGH SCHOOL DIPLOMA	34.1	26.7	7.4										
% W SKILLED OCCUP.	46.7	55.4	-8.7	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	65.6	90.1	-24.5	INVOLVE	.455	-.319	.774	.713	-.008	.721	.334	.07	1.38
% BLACK	0	0	0										
% REPORTING USE OF PRESCHOOL	46.7	27.1	19.6	CHILD ACADEMIC									
% POVERTY ELIGIBLE	45.5	32.0	13.5	EXPECT	-.384	-.107	-.277	-.796	-.908	.112	.346	-.57	.79
% HEAD HOUSEHOLD EMPLOYED	73.9	88.7	-14.8										
% HEAD HOUSEHOLD MALE	76.4	81.1	-4.7	SENSE OF CONTROL	.320	.450	-.130	.671	.718	-.047	.327	-.69	.59
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	5	4	1	PARENT-EDUCATOR									
JOB SATISF. RATING	1.9	1.7	0.2	IMAGE	0.14	0.18	-0.04	0.09	0.38	-0.29	0.179	-.64	.06
BOOK RESOURCE SCALE	4.0	3.7	0.3										
RACE (BLACK/NONBLACK)	1.0	1.0	0	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	1.0	1.0	0	OF METHOD	2.00	1.75	0.25	2.13	1.73	0.40	0.249	-.09	.89
NO. OF HELPERS	1.8	0.2	1.6										
ABLE TO CHOOSE ASSIGNMENT	1.0	1.7	-0.7										
TRNG & TEACHER EXPER	4.8	3.5	1.3										

PROCESS DATA

PROJECT DESCRIPTIONS

REGION	WEST NORTH CENTRAL
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	138,000
PERCENT NONWHITE	2
PROJECT SIZE (PUPILS) . . .	720
NO. PUPILS/PAC MEMBER . . .	18.9
FT PER-PUPIL EXPENDITURE . .	606

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY.	.61	
CHILD-INITIATED INTERACTIONS	-.89	
PROGRAMMED ACADEMIC . .	-.67	
EXPRESSIVE	-.35	
CHILD SELF-LEARNING . .	1.00	

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*See "Guide for Interpretation of Results" for explanation of table entries.

The analysis of pupil measures failed to display any significant differences between the FT and NFT samples, although means for the FT sample were slightly higher in each instance, an outcome that may indicate that FT had a small effect.

FT parents showed significantly greater involvement in school activities than NFT parents, a result that indicates that the program did have some impact on parents. However, no other outcome for either parents or teachers reached significance.

The classroom process data, however, does indicate that the sponsor's program is being implemented. The above average score on self-regulatory and child self-learning factors and the below average score on the programmed/academic factor are consistent with sponsor goals. Only FT classrooms were included in the sample, so contrasts between FT and NFT cannot be drawn.

The first year effects for the Project FW(b), Cohort I sample are summarized in Table 18. The results indicate that none of the test score differences reach significance. A comparison of the net scores (adjusted outcomes) shown in Tables 17 and 18 gives some evidence of a cumulative effect in that the second-year differences are more positive than those of the first year. This interpretation receives further support from data presented in Table 19, which displays the background properties and first-year effects for a Cohort II-K sample in Project FW (b). The baseline variables for the pupils indicate that the four FT and two NFT classrooms are reasonably well matched on pretests and family characteristics. Teachers, on the other hand, appear somewhat different in that NFT teachers tended to have more book resources and freedom to choose assignments, whereas FT teachers had more classroom helpers and, in general, higher levels of training and experience.

Analysis of the FT/NFT differences on each outcome measure revealed that only for parent/child interactions were the differences significant. More interactions were reported by FT parents, a result that is consistent with the model's goals, one of which is to encourage parents to participate directly with their own children inside and outside the classroom. None of the pupil or teacher measures reached significance. The results for Cohort II, first-year pupils and those for Cohort I, first-year pupils tend to favor NFT. This evidence may indicate that the model implemented in Project FW(b) has an initial disruptive effect. This finding coupled with some more positive Cohort I results obtained at the end of the second year suggests that the project effects measured by these outcome variables are not likely to be immediate or positive. This conclusion is supported to some extent by the process data for the two separate

TABLE 18

PROJECT DATA TABLE--FAR WEST LABORATORY PROJECT B, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS,
1969-1970

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	6	6	0	OVERALL ACHIEVEMENT	108.1	111.9	-3.8	92.6	94.0	-1.4	5.11	-11.4	8.6
QUANT. PRESCORE	23.4	25.6	-2.2										
COG. PROCESS PRESCORE	5.9	6.5	-.6	AFFECT	18.4	17.8	.6	16.8	15.4	1.4	1.16	-1.1	3.7
READING PRESCORE	44.1	40.4	3.7										
LANGUAGE PRESCORE	11.7	12.1	-.4	ATTENDANCE	8.1	8.7	-.6	15.3	18.2	-2.9	3.38	-9.5	3.7
AFFECT PRESCORE	17.4	17.4	0										
AGE (JUNE '71)	85.9	86.5	-.6	WRAT TOTAL	49.4	50.7	-1.3	41.0	42.2	-1.2	2.91	-6.9	4.5
% CLASSROOM MALE	51.4	61	-9.6										
% CLASSROOM BLACK	0	2.6	-2.6	QUANTITATIVE	31.3	31.9	-.6	27.9	26.7	1.2	1.48	-1.7	4.1
% PRESCHOOL (OR NO. MOS.)	46.7	27.1	19.6										
% PARENTS W/O HS DIPL.	34.1	26.7	7.4	COGNITIVE PROCESSES	8.2	8.6	-.4	6.8	6.8	0	.49	-1.0	1.0
% PARENTS W/SKILLED OCCUP.	46.7	55.4	-8.7										
% PARENTS BLACK	0	0	0	READING SKILLS	54.6	57.4	-2.8	44.5	48.1	-3.6	3.49	-10.4	3.2
% PARENTS POVERTY ELIGIBLE	45.5	31.9	13.6										
% HEAD HOUSEHOLD EMPLOYED	73.9	88.7	-14.8	LANGUAGE ARTS	13.7	14	-.3	12.5	11.9	.6	.75	-.9	2.1
% HEAD HOUSEHOLD MALE	76.5	81.2	-4.7										

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*See "Guide for Interpretation of Results" for explanation of table entries.

[illegible]

[illegible]

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
% HEAD HOUSEHOLD MALE	78.5	86.0	-7.5										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	4	2	2										
AV. PARENTS/CLASSRM GRP	14.5	16.0	-1.5	PARENT-CHILD INTERACT	-.003	-.624	.621	.534	-.263	.797	.364	.08	1.51
% W/O HIGH SCHOOL DIPLOMA	34.7	49.6	-14.9										
% W SKILLED OCCUP.	49.4	55.8	-6.4										
% POS EVAL OF CHILD LRNG	82.0	58.1	23.9	PARENT-SCHOOL INVOLVE	.278	.021	.257	.248	-.470	.718	.457	-.18	1.61
% BLACK	0	0	0										
% REPORTING USE OF PRESCHOOL	37.5	37.3	0.2										
% POVERTY ELIGIBLE	27.7	10.5	17.2	CHILD ACADEMIC EXPECT	.006	-.519	.527	-.210	-.329	.119	.343	-.55	.79
% HEAD HOUSEHOLD EMPLOYED	81.8	84.8	-3.0										
% HEAD HOUSEHOLD MALE	78.5	86.0	-7.5	SENSE OF CONTROL	.634	.268	.366	.967	.556	.411	.487	-.54	1.37
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	4	2	2										
JOB SATISF. RATING	1.8	1.3	0.5	PARENT-EDUCATOR IMAGE	0.75	0.43	0.32	0.49	0.85	-0.36	0.463	-1.27	.55
BOOK RESOURCE SCALE	2.0	3.0	-1.0										
RACE (BLACK/NONBLACK)	1.0	1.0	0										
IDENT. W. COMMUNITY	0.5	0	0.5	PROFESSION. ACCEPT OF METHOD	2.00	2.00	0	2.33	1.25	1.08	1.472	-1.81	3.97
NO. OF HELPERS	2.0	0	2.0										
ABLE TO CHOOSE ASSIGNMENT	1.0	4.0	-3.0										
TRNG & TEACHER EXPER	7.7	5.0	2.7										

PROGRAM DATA

[illegible]

[illegible]	[illegible]
[illegible] . .	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible] . . .	[illegible]
[illegible] . . .	[illegible]
[illegible] . .	[illegible]

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	3.10	.53
CHILD-INITIATED INTERACTIONS	-.40	-.72
PROGRAMMED ACADEMIC	-.10	-1.26
EXPRESSIVE	.02	-.69
CHILD SELF-LEARNING	-.27	.24

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*See "Guide for Interpretation of Results" for explanation of table entries.

samples, which interestingly show the same general pattern of the factor scores. However, Cohort II is much higher on the self-regulatory factor than Cohort I, while Cohort I is much higher on the self-learning factor. Both factors are representative of Far West's goals.

Project FW(a)

Sponsor FW evaluation data were also collected and analyzed for Cohort I and Cohort II in Project FW(a). Project FW(a) is a relatively large project, located within a very large urban area (3 million people) in the Pacific region. The anticipated per pupil expenditure was $653, and there were slightly more than 21 pupils per PAC member in an average classroom.

Table 20 summarizes the results of the analysis. The Cohort I sample for Project FW(a) consisted of nine FT and four NFT classes. NFT classes were fairly well matched to FT classes on baseline test scores but were clearly different in ethnic composition, FT classrooms being predominantly Black and NFT classrooms predominantly non-Black. However, except for this difference in racial make-up and the usual greater preschool participation of FT pupils, the two samples appear quite comparable. Teacher analyses were not performed because of insufficient data.

The only pupil variable that differed significantly between the two groups was attendance which was higher for the NFT sample. The only parent variable that differed significantly was sense of control; the NFT parents reported a greater sense of control than FT parents (the 95 percent confidence interval favored NFT by .34 to 1.90 scale units). The classroom process characteristics summarized in Table 20 suggest a pattern somewhat different from the patterns of other samples of this model. These classrooms appear not only quite high on the self-regulatory factor, which is characteristic of the model, but also above average on the programmed/academic factor. The programmed/academic factor represents an educational format not usually associated with this sponsor's goals.

The remaining analysis of Project FW(a) is of Cohort II first-year data, which are summarized in Table 21. The baseline values for this sample show that six FT and two NFT classrooms are well matched. However, a problem with the preschool data from the pupil rosters precluded inclusion of preschool experience for this sample. This omission accounts for the discrepancy between the average preschool values reported for the pupils and those reported by the parents. Again, teacher data were insufficient to enable analysis for this sample.

TABLE 20

PROJECT DATA TABLE--FAR WEST LABORATORY PROJECT A, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA								
												CONFIDENCE INTERVAL				
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA		
				PART I CHILD EVALUATION DATA												
NO. OF CLASSROOMS	9	4	5	OVERALL ACHIEVEMENT	141.7	150.1	-8.4	115.5	119.6	-4.1	8.38	-20.5	12.3	PROJECT DESCRIPTORS		
AVERAGE PUPILS/CLASSROOM	9.1	8.7	0.4													
QUANT. PRESCORE	26.0	26.4	-0.4	AFFECT	18.0	17.4	0.6	16.9	16.2	0.7	0.88	-1.0	2.4	REGION	PACIFIC	
COG. PROCESS PRESCORE	6.7	7.1	-0.4													
READING PRESCORE	51.9	51.5	0.4	ATTENDANCE	5.1	1.2	3.9	5.4	-0.3	5.7	2.74	.3	11.1	DISTANCE TO NEAREST SMSA . .	WITHIN	
LANGUAGE PRESCORE	12.3	14.1	-1.8													
AFFECT PRESCORE	16.8	18.4	-1.6	WRAT TOTAL	78.7	86.9	-8.2	66.6	74.0	-7.4	4.53	-16.3	1.5	SIZE OF NEAREST SMSA	2,986,000	
AGE (JUNE '71)	84.5	82.6	1.9													
% CLASSROOM MALE	50.3	57.8	-7.5	QUANTITATIVE	43.2	46.2	-3.0	35.2	35.1	0.1	2.69	-5.2	5.4	PERCENT NONWHITE	32	
% CLASSROOM BLACK	63.8	13.9	49.9													
% PRESCHOOL (ON NO. MOS.)	90.4	63.9	26.5	COGNITIVE PROCESSES	8.2	8.9	-0.7	7.3	7.9	-0.6	0.50	-1.6	.4	PROJECT SIZE (PUPILS) . . .	720	
% PARENTS W/O HS DIPL.	15.2	12.1	3.1													
% PARENTS W SKILLED OCCUP.	68.1	70.6	-2.5	READING SKILLS	61.7	64.6	-2.9	50.4	52.7	-2.3	4.16	-10.5	5.9	NO. PUPILS/PAC MEMBER . . .	21.3	
% PARENTS BLACK	72.5	24.2	48.3													
% PARENTS POVERTY ELIGIBLE	31.8	30.6	1.2	LANGUAGE ARTS	28.2	30.3	-2.1	22.1	23.9	-1.8	2.31	-6.3	2.7	FT PER-PUPIL EXPENDITURE . .	633	
% HEAD HOUSEHOLD EMPLOYED	83.5	86.4	-2.9													
% HEAD HOUSEHOLD MALE	67.7	78.0	-10.3													
				PART II PARENT EVALUATION DATA												
NO. CLASSROOM GROUPS	8	3	5	PARENT CHILD										CLASSROOM OBSERVATION		
AV. PARENTS/CLASSRM GRP	6.1	9.3	-3.2	INTERACT	.633	.411	.222	.463	.223	.240	.299	-.35	.83	FACTOR SCORES		
% W/O HIGH SCHOOL DIPLOMA	15.2	16.1	-.9													
% WITH SKILLED OCCUP.	68.1	71.9	-3.8	PARENT SCHOOL										FACTOR NAME	FT	NFT
% POS EVAL OF CHILD LRNG	96.0	87.5	8.5	INVOLVE	1.009	.668	.341	.647	.556	.091	.406	-.70	.88	SELF REGULATORY	1.47	-.74
% BLACK	72.5	32.3	40.2													
% REPORTING USE OF PRESCHOOL	89.2	38.9	50.3	CHILD ACADEMIC										CHILD-INITIATED		
% POVERTY ELIGIBLE	31.7	29.6	2.1	EXPECT	.140	.851	-.711	-.150	.370	-.520	.420	-1.36	.29	I/TERACTIONS	.61	1.72
% HEAD HOUSEHOLD EMPLOYED	83.4	81.7	1.7													
% HEAD HOUSEHOLD MALE	67.7	70.7	-3.0	SENSE OF CONTROL	.487	1.24	-.787	.201	1.39	-1.12	.388	-1.90	-.34	PROGRAMMED ACADEMIC	.35	.42
														EXPRESSIVE	1.04	-.14
														CHILD SELF-LEARNING	.30	.08

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 35

PROJECT DATA TABLE--FAR WEST LABORATORY PROJECT A, COHORT II, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1970-1971

SAMPLING CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	9	2	4	OVERALL ACHIEVEMENT	110.5	110.8	-0.3	90.7	90.2	0.5	7.20	-13.6	14.6
AVERAGE PUPILS/CLASSROOM	7.4	13.0	-5.6										
QUANT. PRESCORE	27.2	24.8	2.4	AFFECT	17.6	18.8	-1.2	17.3	18.2	-0.9	1.06	-3.0	1.2
COG. PROCESS PRESCORE	8.0	6.9	1.1										
READING PRESCORE	45.9	46.0	-0.1	ATTENDANCE	8.9	5.9	3.0	11.4	3.6	7.8	3.40	1.0	14.6
LANGUAGE PRESCORE	18.2	18.1	0.1										
AFFECT PRESCORE	15.0	17.0	-2.0	WRAT TOTAL	55.6	54.0	1.6	47.8	43.3	4.5	5.00	-5.4	14.6
AGE (JUNE '71)	72.8	72.4	0.4										
% CLASSROOM MALE	38.8	41.8	-3.0	QUANTITATIVE	21.7	20.8	0.9	27.6	26.5	1.1	2.11	-3.0	5.2
% CLASSROOM BLACK	28.8	26.0	2.8										
% PRESCHOOL (HS OR NO. MOS.)	0	0	0	COGNITIVE PROCESSES	8.7	9.1	-0.4	7.8	8.9	-1.1	0.40	-2.0	-0.2
% PARENTS W/O HS DIPL.	27.6	12.1	15.5										
% PARENTS W SKILLED OCCUP.	71.6	87.5	-15.9	READING SKILLS	50.5	50.6	-0.1	48.7	44.8	3.9	4.72	-7.4	15.2
% PARENTS BLACK	44.3	39.2	5.1										
% PARENTS POVERTY ELIGIBLE	26.4	16.8	9.6	LANGUAGE ARTS	18.7	18.7	0	17.0	17.6	-0.6	1.08	-2.7	1.5
% HEAD HOUSEHOLD EMPLOYED	72.8	75.1	-2.3										
% HEAD HOUSEHOLD MALE	87.9	83.5	4.4										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	8	2	6	PARENT-CHILD INTERACT	.187	.283	-.096	.420	.552	-.142	.387	-.84	.56
AV. PARENTS/CLASSROOM GRP	12.3	13.5	-1.2										
% W/O HIGH SCHOOL DIPLOMA	27.6	12.1	15.5	PARENT-SCHOOL INVOLVE	.718	.137	.582	.722	.080	.642	.387	-.15	1.40
% W SKILLED OCCUP	71.6	87.5	-15.9										
% PRO GOAL OF CHILD LANG.	72.6	51.4	20.8	CHILD ACADEMIC EXPECT	.738	.491	.248	.728	.781	-.053	.383	-.71	.60
% BLACK	44.3	39.2	5.1										
% REPORTING USE OF PRESCHOOL	87.2	21.4	66.1	SENSE OF CONTROL	.380	.291	.089	.364	.450	-.186	.518	-1.21	.83
% POVERTY ELIGIBLE	26.4	16.8	9.6										
% HEAD HOUSEHOLD EMPLOYED	72.8	75.1	-2.3										
% HEAD HOUSEHOLD MALE	87.9	83.5	4.4										

PROCESS DATA

PROJECT DESCRIPTION

REGION	PACIFIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	2,980,000
PERCENT NONWHITE	32
PROJECT SIZE (PUPILS)	720
NO. PUPILS PER ADULT	21.3
FT PER-PUPIL EXPENDITURE . .	653

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.74	.19
CHILD-INITIATED INTERACTIONS	.46	1.00
PROGRAMMED ACADEMIC	-.80	-1.07
EXPRESSIVE	1.39	.82
CHILD SELF-LEARNING	.44	-.24

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[a] See "Guide for Interpretation of Results" for explanation of table entries.

First-year impact results show that the NFT sample significantly exceeds the FT classrooms on the cognitive measure and on daily attendance. No other measures, either pupil or parent, show significant FT/NFT differences.

The process scores for this sample indicate a pattern consistent with the sponsor's model. Specifically, the FT classrooms are above average on the self-regulatory factor and below average on the programmed/academic factor. Like Cohort I, this sample is especially high on the expressive factor. The explanation of the child outcomes does not appear to lie in a lack of implementation of the model.

Summary

The salient features of the Sponsor FW model can be outlined as follows:

Focus and Objectives--emphasizes long range program objectives

Child

Cognitive

- Develop problem solving ability

Affective

- Develop self-direction
- Increase ability to take risks, learn from mistakes, and feel safe in expressing feelings
- Develop a healthy self-concept

Parent

- Develop parent's ability to teach his children

Curricular Approach

- Teacher's role that of facilitator
- Intrinsic reinforcement from activities
- Individual child free to choose among self-rewarding activities within structured environment
- Wide variety of activities available

Type of Parent Involvement

- Heavy emphasis on training parents for employment in projects as teacher assistants

Two separate impact analyses were conducted at the sponsor level. The first analysis was conducted on the Cohort I, second-year data, the second on Cohort II first-year data. These results are summarized in Tables 22 and 23, respectively. The results summarized in these tables indicate that interim evidence at the sponsor level is inconclusive although not particularly favorable. In particular, no pupil level results are indicated in either the Cohort I or Cohort II analyses. However, the model shows significant impacts on parents in each case. In Cohort I, the parent/school interaction variable is significantly higher for FT parents, and in Cohort II, the parent/child interaction variable is significantly higher in the FT group. Finally, although project level analyses were not possible for teacher data, aggregation to sponsor level did enable an analysis of the Cohort I data. However, the results which are displayed on Table 22, show that the effects failed to reach significance.

In total, the interim statistical evidence on the effects of the Far West Laboratory's program is not particularly favorable. It may be that the FT battery, which measures more or less traditional academic behaviors, is not particularly well suited to many of the objectives stressed by this sponsor's model, particularly at the kindergarten and first grade level. Nevertheless, given the emphasis this model places on parental involvement, it is difficult to understand the lack of consistent evidence of positive impact on the parental outcome measures. Quite likely a program of this complexity (its primary focus is that of changing process) requires more time to reveal its true impact.

TABLE 22

FAR WEST LABORATORY SUMMARY, COHORT I, KINDERGARTEN ENTERING PROJECTS: TWO-YEAR EFFECTS, 1969-1971

	UNADJUSTED MEANS			ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	143.7	149.6	-5.9	134.6	131.9	2.7	5.30	-7.7	13.1
AFFECT	18.5	18.1	.4	18.4	17.6	.9	.51	-.1	1.9
WRAT	80.5	85.3	-4.8	78.3	79.5	-1.2	2.95	-7.0	4.6
QUANTITATIVE	43.7	45.2	-1.5	39.8	38.1	1.7	1.69	-1.6	5.0
COG. PROCESS	7.9	8.1	-.2	7.5	7.5	.0	.30	-.6	.6
READING	61.3	64.1	-2.8	59.1	59.1	.0	2.66	-5.2	5.2
LANGUAGE	30.6	32.1	-1.6	28.4	27.6	.8	1.43	-2.0	3.6
PARENT DATA									
PARENT-CHILD	.20	.28	-.08	.03	.07	-.04	.16	-.35	.27
PARENT-SCHOOL	.63	.01	.61	.49	-.05	.54	.22	.11	.97
CHILD ACADEMIC EXPECTATION	-.16	.17	-.33	-.25	.02	-.26	.24	-.73	.21
SENSE OF CONTROL	.37	.54	-.17	.29	.50	-.20	.22	-.63	.23
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.34	.37	-.03	.26	.45	-.19	.13	-.44	.06
PROFESSION. ACCEPT METHOD	1.93	1.71	.21	1.93	1.65	.27	.19	-.10	.64

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 23

FAR WEST LABORATORY SUMMARY, COHORT II, KINDERGARTEN ENTERING PROJECTS: ONE-YEAR EFFECTS, 1970-1971

	UNADJUSTED MEANS			ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	115.4	111.7	3.7	107.7	105.0	2.6	4.39	-6.0	11.2
AFFECT	17.8	18.0	-.2	15.5	16.3	-.8	.56	-1.9	.3
WRAT	52.6	50.4	2.2	50.6	49.0	1.5	2.94	-4.3	7.3
QUANTITATIVE	31.2	30.0	1.2	28.2	27.2	1.0	1.21	-1.4	3.4
COG. PROCESS	8.8	8.6	.2	7.6	7.4	.1	.42	-.7	.9
READING	55.9	53.8	2.0	54.2	52.6	1.7	2.91	-4	7.4
LANGUAGE	19.6	19.0	.5	17.9	17.8	.2	.63	-1.0	1.4
PARENT DATA									
PARENT-CHILD	.08	-.13	.21	.28	-.04	.31	.15	.02	.60
PARENT-SCHOOL	.45	.28	.17	.19	.11	.07	.19	-.30	.44
CHILD ACADEMIC EXPECTATION	.29	.04	.25	-.03	-.35	.32	.18	-.03	.67
SENSE OF CONTROL	.43	.16	.27	.03	-.31	.34	.20	-.05	.73

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*See "Guide for Interpretation of Results" for explanation of table entries.

TUCSON EARLY EDUCATION MODEL (TEEM)
University of Arizona

Sponsor's Intended Approach

Participation in contemporary society requires skills and abilities missing in the behavioral repertoires of many individuals because their background does not provide an adequate foundation. The TEEM model attempts to solve this problem by providing children with educational experiences appropriate to developing such skills and abilities--beginning with the behavior characteristics and level of development with which the child enters school and working from there. The model calls on teachers to individualize their teaching and emphasizes persistent adult-child interaction on a one-to-one basis. To meet the needs and learning rates of individual children, the model provides a great variety of behavioral options, including both self-selected and structured activities.

The curriculum for the model focuses on four general areas of development: language competence, development of an intellectual base, development of a motivational base, and societal arts and skills. An intellectual base includes skills assumed to be necessary to the process of learning (e.g., ability to attend, recall, organize behavior toward goals, and evaluate alternatives). A motivational base includes attitudes and behavior related to productive involvement, such as liking school and learning, task persistence, and expectation of success. Societal arts and skill acquisition include reading, writing, and math skills, combined with social skills of cooperation, planning, and the like.

In this model a skill is always taught in a functional setting, and concepts are illustrated by a variety of examples across content areas both within and outside the classroom. Field trips, walks, and visits to the children's homes help the child generalize new skills to his own environment. The technique of simultaneously attending to developing language, intellectual, motivational, and societal skills in a meaningful setting is defined in the model as "orchestration."

The TEEM classroom is organized into behavioral settings and interest centers for small groups to encourage interactions among the child, his environment, and others. Pupil groups are purposely heterogeneous so that children of different ability levels will learn from peer models and work independently with available materials. Imitation, a formal part of classroom practice, is viewed as an especially important process in language acquisition. Social reinforcement techniques, such as praise, attention, and affection, are liberally applied, and materials are chosen and arranged for their reinforcing value. Every effort is made to ensure that the child will come to regard school as significant and rewarding.

In the open-ended context of this model, lessons and learning experience are given definite structure and direction through careful planning by the staff. Adults working in the classroom are trained to use the experiential background of pupils to further instructional objectives, and the home and the neighborhood are treated as instructional resources.

The delivery system for the TEEM model includes programs and services developed to provide continuous input, demonstration, and evaluation to the community, the classroom instructional staff, and to parent liaison personnel. Field representatives visit sites to provide guidance and communicate questions and problems back to the TEEM center. School psychologists serve as consultants to teach project staff to apply psychological techniques in defining and solving educational problems. Evaluation services include a new program that clearly sets out objectives of the program and ways for the community to evaluate how well they are met.

The model establishes positive and frequent contact between schools and parents to acquaint parents with the instructional program and to influence them to participate in school-related activities, work with the Policy Advisory Committee, serve as classroom volunteers, and train for new careers. An attempt is made to provide parents desiring to have a more direct influence on educational policy with increased knowledge about the school system and the political influences that play a role in policy making.

Individual Project Results

Seven samples from four different projects sponsored by the University of Arizona (UA) were included in the analysis of interim effects. The distribution of these evaluation samples in terms of cohort, outcome, and project is as follows:

Cohort	First-Year Effects	Second-Year Effects
IK	(project d)	(projects a & d)
IEF	(project c)	(projects b & c)
IIEF	(project c)	

Project UA(d)

Table 24 presents the analysis data and results for Project UA(d). This project is located in a non-urban area in the mid-Atlantic region. Nine FT and five NFT classrooms were included in the analyses. These FT-NFT classrooms were quite dissimilar; FT classes had a more even distribution of boys and girls, a higher proportion of Blacks, a larger proportion of pupils with preschool experience, more poverty eligible families, and fewer employed parents and heads of households than NFT classes. Moreover, the FT classroom averages were below the NFT classroom averages on all cognitive baseline tests. The baseline data on parents differs similarly.

Covariable data for the teacher analyses (nine FT classes, three NFT), show that FT teachers reported more book resources, more helpers, and more years of experience than the NFT teachers. NFT teachers, however, appeared more closely tied with the school community.

Analysis of covariance on outcomes at the child level failed to reveal any statistically significant effects. Although the adjustments for covariable bias were pronounced (compare unadjusted and adjusted results), all confidence intervals cross zero (change signs), indicating nonsignificance. This project showed the least progress of any on language and reading measures, both on unadjusted and adjusted prepost comparisons.

Of the four outcome variables at the parent level, only the parent/school interaction measure shows significance. The 95 percent confidence interval for the mean difference (adjusted) between FT and NFT on the parent/school interaction scale is between .05 and 1.35 units in favor of FT parents. This result is interesting since parental involvement was below average in this project--one PAC member per 20.4 pupils.

Teacher results failed to reach significance. Since the project was not included in the classroom observation sample, little beyond the differences noted on input measures can be said at the teacher level. The impact of FT in this project appears negligible at the end of the second year of implementation.

This project was among the CI subset for which first-year impact data were also available and analyzed. The results of this analysis

TABLE 24

PROJECT DATA TABLE--UNIVERSITY OF ARIZONA PROJECT D, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS
1969-1971

BASELINE CONTROL DATA VARIABLE	FT	NFT	DIFF
NO. OF CLASSROOMS	9	5	4
AVERAGE PUPILS/CLASSROOM	9.2	7.4	1.8
QUANT. PRESCORE	19.0	22.1	-3.1
COG. PROCESS PRESCORE	5.1	5.8	-0.7
READING PRESCORE	23.8	34.7	-10.9
LANGUAGE PRESCORE	8.7	10.2	-1.5
AFFECT PRESCORE	15.7	15.4	0.3
AGE (JUNE '71)	86.3	86.8	-0.5
% CLASSROOM MALE	51.9	65.2	-13.3
% CLASSROOM BLACK	63.1	44.2	18.9
% PRESCHOOL (OR NO. MOS.)	73.4	38.1	35.3
% PARENTS W/O HS DIPL.	63.9	56.9	7.0
% PARENTS W SKILLED OCCUP.	37.7	40.1	-2.4
% PARENTS BLACK	65.6	42.6	23.0
% PARENTS POVERTY ELIGIBLE	59.2	42.6	16.6
% HEAD HOUSEHOLD EMPLOYED	68.5	83.6	-15.1
% HEAD HOUSEHOLD MALE	69.8	75.3	-5.5
NO. CLASSROOM GROUP	9	5	4
AV. PARENTS/CLASSRM GRP	9.2	7.4	1.8
% W/O HIGH SCHOOL DIPLOMA	63.9	56.9	7.0
% W SKILLED OCCUP.	37.7	40.1	-2.4
% POS EVAL OF CHILD LRNG	92.5	80.0	12.5
% BLACK	65.6	42.6	23.0
% REPORTING USE OF PRESCHOOL	73.4	38.1	35.3
% POVERTY ELIGIBLE	59.2	42.6	16.6
% HEAD HOUSEHOLD EMPLOYED	68.5	83.6	-15.1
% HEAD HOUSEHOLD MALE	69.8	75.3	-5.5
NO. OF CLASSROOMS	9	3	6
JOB SATISF. RATING	2.2	2.0	0.2
BOOK RESOURCE SCALE	4.4	2.7	1.7
RACE (BLACK/NONBLACK)	0.8	1.0	-0.2
IDENT. W. COMMUNITY	0.7	1.4	-0.7
NO. OF HELPERS	1.2	0	1.2
ABLE TO CHOOSE ASSIGNMENT	2.0	2.0	0
TRNG & TEACHER EXPER	6.0	5.0	1.0

	OUTCOME DATA			ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
PART I CHILD EVALUATION DATA									
OVERALL ACHIEVEMENT	118.2	140.2	-22.0	130.4	131.6	-1.2	7.47	-15.8	13.4
AFFECT	17.9	18.7	-0.8	17.7	18.8	-1.1	0.79	-2.6	.4
ATTENDANCE	14.1	11.8	2.3	14.3	12.2	2.1	2.44	-2.7	6.9
WRAT TOTAL	69.9	80.8	-10.9	76.3	77.5	-1.2	4.03	-9.1	6.7
QUANTITATIVE	38.9	42.0	-3.1	42.5	39.1	3.4	2.40	-1.3	8.1
COGNITIVE PROCESSES	6.9	7.0	-0.1	7.3	6.6	0.7	0.45	-.2	1.6
READING SKILLS	47.9	59.3	-11.4	53.7	56.2	-2.5	3.70	-9.8	4.8
LANGUAGE ARTS	24.5	32.0	-7.5	26.8	29.6	-2.8	2.06	-6.8	1.2
PART II PARENT EVALUATION DATA									
PARENT-CHILD INTERACT	.399	.041	.358	.427	-.033	.460	.244	-.02	.94
PARENT-SCHOOL INVOLVE	.121	-.883	1.004	.015	-.682	.697	.331	.05	1.35
CHILD ACADEMIC EXPECT	.545	-.033	.578	.284	-.305	.589	.343	-.08	1.26
SENSE OF CONTROL	-.179	.070	-.249	-.259	.198	-.457	.324	-1.09	.18
PART III TEACHER EVALUATION DATA									
PARENT-EDUCATOR IMAGE	0.45	0.50	-0.05	0.43	0.69	-0.26	0.175	-.60	.08
PROFESSION. ACCEPT **OF METHOD**	1.78	1.67	0.11	1.70	1.47	0.23	0.244	-.25	.71

PROCESS DATA

PROJECT DESCRIPTORS

REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA . .	30-40 MILES
SIZE OF NEAREST SMSA	274,000
PERCENT NONWHITE	15
PROJECT SIZE (PUPILS) . . .	576
NO. PUPILS/PAC MEMBER . . .	20.4
FT PER-PUPIL EXPENDITURE . .	490

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

are summarized in Table 25. These results show that none of the pupil outcomes reached significance. However, a decline between first-year and second-year results is evident. Whereas FT students showed a consistent, though nonsignificant, advantage at the end of the first year, the opposite was true at the end of the second year. This trend suggests that the program is not having the desired impact on pupil performance.

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*See "Guide for Interpretation of Results" for explanation of table entries.

Project UA(a)

The evaluation data for project UA(a) , also a Cohort I-K project, are summarized in Table 26. This project is located in a large city (population 1.5 million) in the south Atlantic region. The project is predominantly black, made up of underemployed, very poor families with few years of formal education. The background characteristics of the five FT and the seven NFT classrooms are highly comparable. Baseline test averages of the two groups were nearly identical and, except that more of the FT pupils had had preschool experience, the groups appear quite similar on all child variables.

Parents and teachers seem reasonably well matched on most variables. One exception is that a higher proportion of FT parents favorably evaluated their child's academic progress. FT teachers reported having more books and more classroom helpers, more freedom to choose teaching assignment, and more teaching experience than NFT teachers.

Outcome analyses for pupil measures fail to reveal significant program impacts. Moreover, the relative differences in the pretest and posttest scores, both adjusted and unadjusted, are nearly identical on every outcome measure. Thus, there is virtually no evidence of differential effect due to the FT program. Similarly, analysis of parent variables failed to display any significant FT/NFT differences, though all measured differences favored the FT group.

The one significant outcome for this project was the impact of the program on teacher approval of classroom procedures similar to those used in the FT classrooms. FT teachers showed more approval than NFT teachers at the 95 percent confidence level. Adequate interpretation of this result would require detailed process descriptions which are unavailable since classroom observations were not made in this project.

TABLE 25

PROJECT DATA TABLE--UNIVERSITY OF ARIZONA PROJECT D, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	9	5	4	OVERALL ACHIEVEMENT	94.8	104	-9.2	101.7	98.4	3.3	5.10	-6.7	13.3
QUANT. PRESCORE	19.0	22.1	-3.1										
COG. PROCESS PRESCORE	5.1	5.8	-.7	AFFECT	16.6	16.8	-.2	16.5	15.8	.7	1.15	-1.6	3.0
READING PRESCORE	23.8	34.7	-10.9										
LANGUAGE PRESCORE	8.7	10.2	-1.5	ATTENDANCE	16.8	13.1	3.7	14.9	17.6	-2.7	3.37	-9.3	3.9
AFFECT PRESCORE	15.7	15.4	.3										
AGE (JUNE '71)	86.2	86.7	-.5	WRAT TOTAL	43.5	48.4	-4.9	47.5	46.3	1.2	2.90	-4.5	6.9
% CLASSROOM MALE	51.9	65.2	-13.3										
% CLASSROOM BLACK	63.1	44.2	18.9	QUANTITATIVE	26.7	28.7	-2	27.5	26.6	.9	1.48	-2.0	3.8
% PRESCHOOL (OR NO. MOS.)	73.4	38.1	35.3										
% PARENTS W/O HS DIPL.	63.9	56.9	7.0	COGNITIVE PROCESSES	7.5	7.8	-.3	7.4	6.9	.5	.49	-.5	1.5
% PARENTS W/SKILLED OCCUP.	37.7	40.1	-2.4										
% PARENTS BLACK	65.6	42.5	23.1	READING SKILLS	48.2	54.9	-6.7	54.0	53.0	1.0	3.48	-5.8	7.8
% PARENTS POVERTY ELIGIBLE	59.2	42.6	16.6										
% HEAD HOUSEHOLD EMPLOYED	68.5	83.6	-15.1	LANGUAGE ARTS	11.9	12.8	-.9	12.1	12.0	.1	.75	-1.4	1.6
% HEAD HOUSEHOLD MALE	69.8	75.3	-5.5										

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*See "Guide of Interpretation of Results" for explanation of table entries.

TABLE 26

PROJECT DATA TABLE--UNIVERSITY OF ARIZONA PROJECT A, COHORT II KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA*				CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	7	-2	OVERALL ACHIEVEMENT	114.7	115.5	-0.8	132.2	134.3	-2.1	7.61	-17.0	12.8
AVERAGE PUPILS/CLASSROOM	9.0	8.6	0.4										
QUANT. PRESCORE	16.9	17.4	-0.5	AFFECT	17.3	17.4	-0.1	17.5	17.6	-0.1	0.80	-1.7	1.5
COG. PROCESS PRESCORE	5.7	5.1	0.6										
READING PRESCORE	28.7	29.5	-0.8	ATTENDANCE	9.3	12.8	-3.5	10.3	14.2	-3.9	2.50	-8.8	1.0
LANGUAGE PRESCORE	8.2	7.6	0.6										
AFFECT PRESCORE	16.1	15.0	1.1	WRAT TOTAL	63.6	66.7	-3.1	71.7	75.0	-3.3	4.11	-11.4	4.8
AGE (JUNE '71)	82.9	85.0	-2.1										
% CLASSROOM MALE	60.9	65.0	-4.1	QUANTITATIVE	36.5	37.4	-0.9	42.0	43.8	-1.8	2.41	-6.6	3.0
% CLASSROOM BLACK	96.0	100.0	-4.0										
% PRESCHOOL (OR NO. MOS.)	70.3	100.0	-29.7	COGNITIVE PROCESSES	7.7	7.1	0.6	8.2	7.6	0.6	0.46	-.3	1.5
% PARENTS W/O HS DIPL.	69.9	78.7	-8.8										
% PARENTS W SKILLED OCCUP.	36.8	33.2	3.6	READING SKILLS	46.8	48.3	-1.5	54.6	56.3	-1.7	2.77	-7.1	3.7
% PARENTS BLACK	93.7	100.0	-6.3										
% PARENTS POVERTY ELIGIBLE	81.4	82.7	-1.3	LANGUAGE ARTS	23.4	22.7	0.7	27.1	26.7	0.4	2.10	-3.7	4.5
% HEAD HOUSEHOLD EMPLOYED	51.8	49.3	2.5										
% HEAD HOUSEHOLD MALE	36.4	36.2	0.2										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	5	6	-1	PARENT-CHILD INTERACT	-.119	-.236	.117	-.004	-.150	.146	.259	-.36	.65
AV. PARENTS/CLASSRM GRP	9.2	7.2	2.0										
% W/O HIGH SCHOOL DIPLOMA	69.9	78.7	-8.8										
% W SKILLED OCCUP.	36.8	33.2	3.6	PARENT-SCHOOL INVOLVE	.698	.110	.588	.486	.120	.366	.351	-.32	1.05
% POS EVAL OF CHILD LRNG	91.5	65.0	26.5										
% BLACK	93.7	100.0	-6.3										
% REPORTING USE OF PRESCHOOL	87.9	56.8	31.1	CHILD ACADEMIC EXPECT	.057	-.635	.692	-.011	-.208	.197	.364	-.52	.91
% POVERTY ELIGIBLE	81.4	82.7	-1.3										
% HEAD HOUSEHOLD EMPLOYED	51.8	49.3	2.5										
% HEAD HOUSEHOLD MALE	36.4	36.2	0.2	SENSE OF CONTROL	.167	-.031	.198	-.018	-.033	.015	.344	-.66	.69
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	3	5	-2	PARENT-EDUCATOR IMAGE	0.38	0.23	0.15	0.19	0.24	-0.05	0.191	-.42	.32
JOB SATISF. RATING	1.7	1.8	-0.1										
BOOK RESOURCE SCALE	4.3	3.4	0.9										
RACE (BLACK/NONBLACK)	0	0.2	-0.2	PROFESSION. ACCEPT OF METHOD	2.00	1.60	0.40	2.06	1.43	0.63	0.267	.11	1.15
IDENT. W. COMMUNITY	1.0	1.0	0										
NO. OF HELPERS	2.3	0.8	1.5										
ABLE TO CHOOSE ASSIGNMENT	2.0	1.2	0.8										
TRNG & TEACHER EXPER	6.3	5.4	0.9										

PROCESS DATA	
PROJECT DESCRIPTIONS	
REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	1,380,000
PERCENT NONWHITE	47
PROJECT SIZE (PUPILS)	655
NO. PUPILS/PAC MEMBER	--
FT PER-PUPIL EXPENDITURE . .	1,032

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

Project UA(b)

The results for Project UA(b), an entering first grade project, are displayed in Table 27. This very large project (1050 pupils) is located in a major urban area in a west-south central state. Eighty percent of the families participating in the FT classes were Black. Evidence regarding the similarity of the comparison group is mixed. NFT classes had a higher percentage of boys than FT classes, whereas FT parents tended to have less education, lower occupational levels, less current employment, lower incomes, and fewer male heads of household than NFT parents. The FT group had only slightly higher preschool participation rates than the NFT group. FT teachers were slightly less satisfied with their jobs, more likely to be Black, less likely to be resident within the school community, and more likely to have an assistant or classroom helper than NFT teachers.

No pupil outcome measures showed significant program impact. However, all FT/NFT adjusted differences indicated a modest positive FT program increment. (Note that the attendance measure is actually an absence rate; thus a lower value is favorable.) Since sponsor level averages were used to estimate classroom data, analysis of effects actually represents the regressed estimate of the model's impact on a sample displaying these population characteristics.* Thus, it is estimated that this FT program, which was anticipated to cost an average of $996 per pupil, would produce small, statistically nonsignificant gains over a comparable sample of pupils without the program. The strongest gain would be in reading skills.

Parent impact data also failed to reach significance for this project. The one difference that approached significance (95 percent confidence interval = -.09 to 1.13 units) was for parent/school interactions. Also, the pupil/PAC ratio of 15.9 suggests that, on the average, slightly more than one parent per classroom participated in PAC.

FT teachers responded significantly more favorably to FT-like procedures (i.e., gave a positive evaluation to classroom practices) than NFT teachers. The confidence interval indicates a .95 probability that this true effect is somewhere between .07 and 1.37 scale units. Since classroom observation data were available for several classrooms in this project, averages on Factor Scores are presented. These averages show FT as most different from NFT on the expressive and the self-regulatory factors. These factors best describe the Arizona model and suggest implementation is taking place according to sponsor goals. While FT classes

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*Because of a redefinition of K and EF distinctions, this project sample had been administered an inappropriate level of the test battery, resulting in exclusion of the data from analysis.

TABLE 27*

PROJECT DATA TABLE--UNIVERSITY OF ARIZONA PROJECT B, COHORT I, ENTERING FIRST GRADE: TWO YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	8	6	2	OVERALL ACHIEVEMENT	138.3	138.3	0	152.3	135.7	16.6	10.21	-3.4	36.6
AVERAGE PUPILS/CLASSROOM	--	--	--										
QUANT. PRESCORE	38.8	38.8	0	AFFECT	18.5	18.5	0	18.7	17.9	0.8	0.66	-.5	2.1
COG. PROCESS PRESCORE	6.7	6.7	0										
READING PRESCORE	57.3	57.3	0	ATTENDANCE	10.3	10.2	0.1	10.0	13.2	-3.2	3.38	-9.8	3.4
LANGUAGE PRESCORE	12.5	12.5	0										
AFFECT PRESCORE	16.5	16.1	0.4	WRAT TOTAL	98.0	98.0	0	103.2	97.2	6.0	4.39	-2.6	14.6
AGE (JUNE '71)	99.8	104.8	-5.0										
% CLASSROOM MALE	47.4	66.8	-19.4	QUANTITATIVE	38.7	38.7	0	40.5	39.1	1.4	3.07	-4.6	7.4
% CLASSROOM BLACK	78.2	84.1	-5.9										
% PRESCHOOL (OR NO. MOS.)	82.3	71.9	10.4	READING SKILLS	76.6	76.6	0	85.7	73.0	12.7	6.78	-.6	26.0
% PARENTS W/O HS DIPL.	75.7	66.6	9.1										
% PARENTS W SKILLED OCCUP.	14.3	26.2	-11.9	LANGUAGE ARTS	22.8	22.8	0	26.2	23.6	2.6	2.03	-1.4	6.6
% PARENTS BLACK	77.3	81.2	-3.9										
% PARENTS POVERTY ELIGIBLE	94.8	49.2	45.6										
% HEAD HOUSEHOLD EMPLOYED	65.5	92.5	-27.0										
% HEAD HOUSEHOLD MALE	58.7	75.0	-16.3										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	8	6	2										
AV. PARENTS/CLASSRM GRP	11.0	5.8	5.2	PARENT-CHILD INTERACT	-.099	-.001	-.098	.018	-.261	.279	.305	-.32	.88
% W/O HIGH SCHOOL DIPLOMA	75.7	66.6	9.1										
% W SKILLED OCCUP.	14.3	26.2	-11.9										
% POS EVAL OF CHILD LRNG	83.9	57.6	26.3	PARENT-SCHOOL INVOLVE	.389	-.323	.712	.116	-.400	.516	.311	-.09	1.13
% BLACK	77.3	81.2	-3.9										
% REPORTING USE OF PRESCHOOL	82.3	66.3	16.0										
% POVERTY ELIGIBLE	94.8	49.2	45.6	CHILD ACADEMIC EXPECT	.446	.153	.293	-.144	.301	-.447	.307	-1.05	.15
% HEAD HOUSEHOLD EMPLOYED	65.5	92.5	-27.0										
% HEAD HOUSEHOLD MALE	58.7	75.0	-16.3	SENSE OF CONTROL	.257	.269	-.012	.192	.398	-.206	.299	-.79	.38
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	8	4	4										
JOB SATISF. RATING	2.0	2.9	-0.9	PARENT-EDUCATOR IMAGE	0.06	0.50	-0.44	0.04	0.47	-0.43	0.223	-.87	.01
BOOK RESOURCE SCALE	3.4	3.3	0.1										
RACE (BLACK/NONBLACK)	0.5	0	0.5										
IDENT. W. COMMUNITY	0.7	1.2	-0.5	PROFESSION. ACCEPT OF METHOD	1.88	2.00	-0.12	1.76	1.04	0.72	0.334	.07	1.37
NO. OF HELPERS	1.0	0	1.0										
ABLE TO CHOOSE ASSIGNMENT	1.4	1.5	-0.1										
TRNG & TEACHER EXPER	5.6	5.4	0.2										

PROCESS DATA

PROJECT DESCRIPTORS

PROJECT DESCRIPTORS	
REGION	WEST SOUTH CENTRAL
DISTANCE TO NEAREST SMSA	WITHIN
SIZE OF NEAREST SMSA	677,000
PERCENT NONWHITE	21
PROJECT SIZE (PUPILS)	1,050
NO. PUPILS/PAC MEMBER	13.9
FT PER-PUPIL EXPENDITURE	996

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.85	-1.31
CHILD-INITIATED INTERACTIONS	.00	-.34
PROGRAMMED ACADEMIC	.27	-.69
EXPRESSIVE	1.07	-.17
CHILD SELF-LEARNING	.29	-.07

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*See "Guide for Interpretation of Results" for explanation of table entries.

are higher than NFT classes on the programmed academic dimension, they appear to have little more than the average amount of programmed academic activity. This may, in part, account for the lack of strong results in the traditional academic achievement variables and further suggests that these tests do not adequately evaluate this model.

Project UA(c)

The remaining University of Arizona project included in this interim evaluation is UA(c). This project, for entering first grade pupils, has data for analysis of first- and second-year effects in Cohort I and for first-year effects in Cohort II.

Project UA(c) is characterized as predominantly white, moderate in size, and located within 20 miles of a SMSA of 120,000 residents in the south Atlantic region. The anticipated per pupil expenditure of $910 is slightly above average, and the pupil/PAC ratio of 7.9 is well above average. Classroom observation data were collected for classrooms in both the CI and CII samples.

The results of the analysis of CI-EF two-year program effects are presented in Table 28. These results are based on four FT and four NFT classrooms. The quality of the FT/NFT match on this project is considered poor. FT classes were below NFT on all cognitive baseline measures. In addition, the FT classes comprised higher proportions of black pupils and greater percentages of pupils with preschool experience. But with the exception of the ethnic and preschool variables, the FT and NFT families appeared relatively comparable. That is, parents were nearly proportionally equivalent on education (low), skilled occupations (low), employment (relatively high), impoverishment (relatively low), and male heads of household (high). FT parents also tended to respond more favorably to the child's academic progress than did NFT parents.

FT teachers and NFT teachers were quite dissimilar. FT teachers reported over twice the resources (books and helpers) as NFT, but NFT teachers were more integral to the communities, more experienced, and reported more flexibility in choosing assignments than FT teachers.

Analysis of outcomes failed to reveal any significant program impacts in any of the pupil outcome variables. Moreover, relatively large deficits in achievements (reading, in particular) were evident and approach significance. Parent impact analyses show a significant difference on sense of control; scores of FT parents are from .2 to 1.55 scale units above scores of NFT parents at the 95 percent confidence level. Teacher outcome differences fail even to approach significance.

TABLE 28

PROJECT DATA TABLE--UNIVERSITY OF ARIZONA PROJECT C, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	4	0	OVERALL ACHIEVEMENT	109.6	139.1	-29.5	110.4	125.6	-15.2	11.84	-38.4	8.0
AVERAGE PUPILS/CLASSROOM	11.3	5.8	5.5										
QUANT. PRESCORE	29.5	30.9	-1.4	AFFECT	18.5	18.4	0.1	18.6	18.9	-0.3	0.77	-1.8	1.2
COG. PROCESS PRESCORE	7.5	7.7	-0.2										
READING PRESCORE	56.5	65.2	-8.7	ATTENDANCE	10.8	10.1	0.7	10.0	9.9	0.1	3.92	-7.6	7.8
LANGUAGE PRESCORE	12.6	14.1	-1.5										
AFFECT PRESCORE	17.2	16.8	0.4	WRAT TOTAL	84.6	93.0	-8.4	85.8	89.7	-3.9	5.09	-13.9	6.1
AGE (JUNE '71)	97.0	97.6	-0.6										
% CLASSROOM MALE	64.9	60.0	4.9	QUANTITATIVE	34.6	40.3	-5.7	32.4	35.1	-2.7	3.56	-9.7	4.3
% CLASSROOM BLACK	41.7	2.3	39.4										
% PRESCHOOL (OR NO. MOS.)	84.5	38.3	46.2	READING SKILLS	55.8	79.4	-23.6	58.6	72.3	-13.7	7.86	-20.7	1.7
% PARENTS W/O HS DIPL.	84.8	88.9	-4.1										
% PARENTS W SKILLED OCCUP.	29.0	15.9	13.1	LANGUAGE ARTS	19.1	19.3	-0.2	19.2	18.0	1.2	2.36	-3.4	5.8
% PARENTS BLACK	41.3	3.7	37.6										
% PARENTS POVERTY ELIGIBLE	49.8	42.6	7.2										
% HEAD HOUSEHOLD EMPLOYED	81.5	68.5	13.0										
% HEAD HOUSEHOLD MALE	84.7	75.9	8.8										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	4	4	0										
AV. PARENTS/CLASSRM GRP	11.3	6.7	4.6	PARENT-CHILD INTERACT	.069	.278	-.209	.195	.589	-.394	.351	-1.08	.29
% W/O HIGH SCHOOL DIPLOMA	84.8	88.9	-4.1										
% W SKILLED OCCUP.	29.0	15.9	13.1										
% POS EVAL OF CHILD LRNG	62.1	41.7	20.4	PARENT-SCHOOL INVOLVE	.354	.124	.230	.428	.494	-.066	.358	-.77	.64
% BLACK	41.3	3.7	37.6										
% REPORTING USE OF PRESCHOOL	84.5	51.1	33.4										
% POVERTY ELIGIBLE	49.8	42.6	7.2	CHILD ACADEMIC EXPECT	-.304	-.632	.328	-.013	.015	-.028	.353	-.72	.66
% HEAD HOUSEHOLD EMPLOYED	81.5	68.5	13.0										
% HEAD HOUSEHOLD MALE	84.7	75.9	8.8	SENSE OF CONTROL	.430	-.614	1.04	.657	-.215	.872	.344	.20	1.55
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	3	2	1										
JOB SATISF. RATING	1.5	1.7	-0.2	PARENT-EDUCATOR IMAGE	0.19	0.08	0.11	0.27	0.05	0.22	0.297	-.36	.80
BOOK RESOURCE SCALE	4.7	2.0	2.7										
RACE (BLACK/NONBLACK)	1.0	1.0	0										
IDENT. W. COMMUNITY	0.3	1.5	-1.2	PROFESSION. ACCEPT OF METHOD	1.67	1.50	0.17	1.94	1.57	0.37	0.445	-.50	1.24
NO. OF HELPERS	1.3	0.5	0.8										
ABLE TO CHOOSE ASSIGNMENT	1.0	1.5	-0.5										
TRNG & TEACHER EXPER	4.0	5.5	-1.5										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA . .	20 MILES
SIZE OF NEAREST SMSA	119,000
PERCENT NONWHITE	5
PROJECT SIZE (PUPILS) . . .	357
NO. PUPILS/PAC MEMBER . . .	7.9
FT PER-PUPIL EXPENDITURE . .	910

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.77	-.28
CHILD-INITIATED INTERACTIONS	.47	.64
PROGRAMMED ACADEMIC . . .	-.12	-.30
EXPRESSIVE	-.37	-.61
CHILD SELF-LEARNING . . .	.95	.19

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*See "Guide for Interpretation of Results" for explanation of table entries.

However, classroom observation factors indicate that the sponsor's model is being implemented in part. Like project UA(b) we find this project considerably above average on the self-regulatory factor. In addition the child self-learning factor score appears well above average. This factor also reflects sponsor goals. The Arizona model encourages children to become more self sufficient, evaluate problems, and express themselves. Again it seems that standard achievement tests do not adequately evaluate interim changes in children in these models.

Comparison of these second-year results with CI-EF first-year data (Table 29) for the same pupils show that, if anything, performance decrements increased from 1970 to 1971. For all achievement measures except language skills, the two-year trend favors the NFT pupils. Also, the one-year difference in affect (95 percent confidence interval = .8 to 5.8 units) did not recur in the two-year data.

The Cohort II, one-year sample (Table 30) appears to be well matched with the NFT comparison group on all variables except baseline test scores, where FT consistently averaged above NFT. An inspection of the table reveals that there were no FT/NFT differences on pupil outcome measures, except for the significantly better affect scores noted for the FT classes.

Neither parent nor teacher results reach significance. This lack of significance may be related to somewhat limited implementation, as shown in classroom observation data. The profile of factors scores for Cohort II FT classrooms is similar to that for the NFT comparison group, and scores on factors consistent with the sponsor's model (in particular, self-regulatory and self-learning) are generally below scores of other FT classrooms implementing the same model.

Summary

Separate summary analyses on University of Arizona data are reported only for Cohort I-K and Cohort I-E, two-year results, for each of which two or more project samples were included. Sponsor summaries based on single projects are not repeated in this section.

The salient features of this FT approach are summarized below:

TABLE 29

PROJECT DATA TABLE--UNIVERSITY OF ARIZONA PROJECT C, COHORT I, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	4	0	OVERALL ACHIEVEMENT	131.3	149.9	-18.6	127.7	137.6	-9.9	4.00	-17.7	-2.1
QUANT. PRESCORE	29.6	30.9	-1.3										
COG. PROCESS PRESCORE	7.5	7.7	-.2	AFFECT	18.6	16.9	1.7	17.8	14.5	3.3	1.27	.8	5.8
READING PRESCORE	56.5	65.2	-8.7										
LANGUAGE PRESCORE	12.6	14.1	-1.5	ATTENDANCE	14.1	8.1	6.0	15.8	13.0	2.8	3.46	-4.0	9.6
AFFECT PRESCORE	17.2	16.8	.4										
AGE (JUNE '71)	97.0	97.6	-.6	WRAT TOTAL	63.4	71.3	-7.9	61.5	64.7	-3.2	2.89	-8.9	2.5
% CLASSROOM MALE	64.9	60.0	4.9										
% CLASSROOM BLACK	41.7	2.3	39.4	QUANTITATIVE	35.2	41.2	-6.0	33.9	37.7	-3.8	1.22	-6.2	1.4
% PRESCHOOL (OR NO. MOS.)	84.5	38.3	46.2										
% PARENTS W/O HS DIPL.	84.8	88.9	-4.1	COGNITIVE PROCESSES	8.4	9.6	-1.2	7.8	9.2	-1.4	.46	-2.3	-.5
% PARENTS W/SKILLED OCCUP.	29.0	15.9	13.1										
% PARENTS BLACK	41.3	3.7	37.6	READING SKILLS	71.0	79.0	-8.0	69.8	71.9	-2.1	3.17	-8.3	4.1
% PARENTS POVERTY ELIGIBLE	49.8	42.6	7.2										
% HEAD HOUSEHOLD EMPLOYED	81.5	68.5	13.0	LANGUAGE ARTS	16.6	20.1	-3.5	16.2	19.1	-2.9	.84	-4.6	-1.3
% HEAD HOUSEHOLD MALE	84.7	75.9	8.8										

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 20

PROJECT DATA TABLE—UNIVERSITY OF ARIZONA PROJECT C, COHORT II, ENTERING FIRST GRADE: ONE-YEAR EFFECTS
1970-1971

BASELINE CONTROL DATA			
VARIABLE	FT	NFT	DIFF
NO. OF CLASSROOMS	4	2	2
AVERAGE PUPILS/CLASSROOM	15.3	15.0	0.3
QUANT. PRESCORE	31.8	25.1	6.7
COG. PROCESS PRESCORE	7.7	7.3	0.4
READING PRESCORE	43.0	25.7	17.3
LANGUAGE PRESCORE	15.1	14.6	0.5
AFFECT PRESCORE	16.7	14.2	2.5
AGE (JUNE '71)	84.9	85.0	-.172
% CLASSROOM MALE	51.1	58.2	-7.1
% CLASSROOM BLACK	20.9	17.4	3.5
% PRESCHOOL (ON NO. MOS.)	4.2	7.2	-3.0
% PARENTS W/O HS DIPL.	78.2	81.4	-3.2
% PARENTS W SKILLED OCCUP.	28.8	14.5	14.3
% PARENTS BLACK	20.9	19.6	1.3
% PARENTS POVERTY ELIGIBLE	31.3	36.2	-4.9
% HEAD HOUSEHOLD EMPLOYED	83.3	85.7	-2.4
% HEAD HOUSEHOLD MALE	87.3	73.1	14.20
NO. CLASSROOM GROUPS	4	2	2
AV. PARENTS/CLASSRM GRP	21.6	20.0	1.6
% W/O HIGH SCHOOL DIPLOMA	78.2	81.4	-3.2
% W SKILLED OCCUP.	28.8	14.5	14.3
% POS EVAL OF CHILD LRNG	65.0	76.8	-11.8
% BLACK	20.9	19.6	1.3
% REPORTING USE OF PRESCHOOL	78.7	-49.9	28.8
% POVERTY ELIGIBLE	31.3	36.2	-4.9
% HEAD HOUSEHOLD EMPLOYED	83.3	85.7	-2.4
% HEAD HOUSEHOLD MALE	87.3	73.1	14.2
NO. OF CLASSROOMS	3	2	1
JOB SATISF. RATING	1.9	1.8	.1
BOOK RESOURCE SCALE	4.7	5.0	-.3
RACE (BLACK/NONBLACK)	1.0	.5	.5
IDENT. W. COMMUNITY	.7	1.0	-.3
NO. OF HELPERS	1.3	1.0	.3
ABLE TO CHOOSE ASSIGNMENT	2.7	1.0	1.7
TRNG & TEACHER EXPER	6.0	4.0	2.0

OUTCOME DATA				ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
PART I CHILD EVALUATION DATA									
OVERALL ACHIEVEMENT	128.2	119.4	8.8	127.3	132.9	-5.6	9.71	-24.6	13.4
AFFECT	19.9	16.8	3.1	19.5	17.4	2.1	.50	1.0	3.2
ATTENDANCE	10.5	10.0	.5	11.2	16.2	-5.0	3.40	-11.8	1.8
MEAT	68.7	60.1	8.6	70.1	71.3	-1.2	6.09	-13.1	10.7
QUANTITATIVE	47.4	44.8	2.6	47.0	48.6	-1.6	4.14	-9.7	6.5
COGNITIVE PROCESSES	10.0	10.5	-.5	8.9	10.0	-1.1	1.54	-4.1	1.9
READING SKILLS	70.9	64.1	6.8	71.4	74.3	-2.9	5.40	-13.5	7.7
LANGUAGE ARTS	20.7	18.6	2.1	20.4	21.4	-1.0	2.14	-5.2	3.2
PART II PARENT EVALUATION DATA									
PARENT-CHILD INTERACT	-.154	-.057	-.097	.114	-.201	.087	.495	-0.88	1.06
PARENT-SCHOOL INVOLVE	.260	-.048	.308	.181	.060	.101	.782	-1.43	1.63
CHILD ACADEMIC EXPECT	-.199	-.103	-.096	.199	.055	.144	.538	-0.91	1.20
SENSE OF CONTROL	-.064	.440	-.506	-.088	.614	-.702	.565	-1.81	0.41
PART III TEACHER EVALUATION DATA									
PARENT-EDUCATOR IMAGE	.28	.28	0.0	.49	.27	.22	.359	-0.48	0.92
PROFESSION. ACCEPT OF METHOD	2.00	1.50	.50	2.08	1.62	.46	.390	-0.30	1.22

PROCESS DATA

PROJECT DESCRIPTORS

REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA . .	20 Miles
SIZE OF NEAREST SMSA	119,000
PERCENT NONWHITE	5
PROJECT SIZE (PUPILS) . . .	207
NO. PUPILS/PAC MEMBER . . .	7.9
FT PER-PUPIL EXPENDITURE . .	910

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.54	.77
CHILD-INITIATED INTERACTIONS	.18	.02
PROGRAMMED ACADEMIC	-.04	-.05
EXPRESSIVE	.04	-.17
CHILD SELF-LEARNING	.54	.85

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*See "Guide for Interpretation of Results" for explanation of table entries.

Focus & Objectives--emphasizes intermediate objectives

Child

Cognitive

Develop language competence

Develop skills underlying all academic performance, such as the ability to:

- Attend
- Recall
- Organize behavior toward goals
- Evaluate alternatives

Develop reading, writing, and math skills

Affective

Develop positive attitude toward school and learning

Increase expectation of success

Develop social skills of cooperation and planning

Curricular Approach

Teacher's role that of director

Reinforcement primarily from teacher

Emphasizes persistent adult-child interaction on 1-to-1 basis in small heterogenous groups

Provides variety of behavioral settings, including both self-selected and structured activities

Type of Parent Invovlement

Inform parents about program

Encourage parents to work in classroom as volunteers

Encourage parents to work with PAC

Results of analyses of the second-year, Kindergarten entrance samples are presented in Table 31 and second-year first grade entrance samples in Table 32. These results show that the University of Arizona model has not produced identifiable impact on pupil outcomes after two years. Similar results were noted for first-year data (both K and EF, CI and CII) except that FT pupils seemed to show greater positive affect following one year in the program. It thus appears that the model has not attained many of its cognitive objectives. However, it has met with partial success in attaining noncognitive objectives.

Analysis of parent outcomes present a somewhat more favorable evaluation for the impact of this model. In the Kindergarten projects, significant effects occur on both the parent/school and academic expectation measures. In the entering first-grade samples, results of parent outcome analyses show that FT parents are significantly more involved and have a stronger sense of control over educational activities than NFT parents. Also, this sponsor level analysis (entering first grade) shows FT teachers as significantly more approving of their methods than NFT teachers.

Apparently then, this model has been reasonably well implemented in at least some projects, is having its intended impact in generating parent involvements in schooling, and is producing occasional evidence of other desirable impacts, such as teacher approval and parental confidence. At this interim point, it appears lacking primarily in strong evidence of positive impacts on the child.

TABLE 31

UNIVERSITY OF ARIZONA SUMMARY, COHORT I, KINDERGARTEN ENTERING PROJECTS: TWO-YEAR EFFECTS 1969-1971

	UNADJUSTED MEANS			ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL*	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	117.0	125.8	-8.8	129.5	132.0	-2.5	5.69	-13.7	8.6
AFFECT	17.7	18.0	-.3	17.8	18.2	-.4	.55	-1.5	.7
WRAT	67.6	72.6	-4.9	72.8	75.3	-2.5	3.17	-8.7	3.7
QUANTITATIVE	38.0	39.3	-1.2	42.3	41.5	.8	1.81	-2.8	4.4
COG. PROCESS	7.2	7.1	.1	7.8	7.3	.5	.33	-.2	1.2
READING	47.5	52.9	-5.4	53.1	55.7	-2.6	2.85	-8.2	3.0
LANGUAGE	24.1	26.5	-2.4	26.1	27.5	-1.4	1.53	-4.4	1.6
PARENT DATA									
PARENT-CHILD	.21	-.11	.32	.20	-.07	.27	.17	-.06	.60
PARENT-SCHOOL	.33	-.34	.67	.29	-.22	.51	.23	.06	.96
CHILD ACADEMIC EXPECTATION	.37	-.36	.73	.34	-.34	.68	.26	.17	1.19
SENSE OF CONTROL	-.06	.02	-.07	-.07	.08	-.15	.24	-.62	.32
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.44	.33	.10	.26	.34	-.08	.13	-.34	.18
PROFFESSION. ACCEPT FT	1.83	1.62	.21	1.83	1.58	.25	.19	-.12	.62

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 32

UNIVERSITY OF ARIZONA SUMMARY, COHORT I, ENTERING FIRST GRADE PROJECTS: TWO-YEAR EFFECTS 1969-1971

				ADJUSTED OUTCOME DATA					
	UNADJUSTED MEANS							CONFIDENCE INTERVAL	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	128.7	138.6	-9.9	126.2	126.9	-.7	7.44	-15.3	13.9
AFFECT	18.5	18.5	.0	18.0	18.0	.0	.50	-1.0	1.0
WRAT	93.5	96.0	-2.5	93.0	92.4	.6	3.12	-5.5	6.7
QUANTITATIVE	37.4	39.4	-2.0	36.8	36.7	.1	2.23	-4.3	4.5
READING	69.6	77.7	-8.1	68.8	70.7	-1.9	5.0	-11.7	7.9
LANGUAGE	21.6	21.4	.2	20.4	19.1	1.3	1.42	-1.5	4.1
PARENT DATA									
PARENT-CHILD	-.04	.11	-.15	.03	.09	-.07	.17	-.40	.26
PARENT-SCHOOL	.38	-.14	.52	.54	-.06	.60	.22	.17	1.03
CHILD ACADEMIC EXPECTATION	.20	-.16	.36	.24	-.13	.37	.24	-.10	.84
SENSE OF CONTROL	.31	-.08	.40	.44	-.05	.48	.21	.07	.89
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.10	.35	-.26	.20	.43	-.23	.18	-.58	.12
PROFESSION. ACCEPT FT	1.82	1.83	-.02	2.26	1.62	.64	.29	.07	1.21

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*See "Guide for Interpretation of Results" for explanation of table entries.

BANK STREET COLLEGE OF EDUCATION APPROACH
Bank Street College

Sponsor's Intended Approach

Basic to the Bank Street approach is a rational, democratic life situation in the classroom. The child participates actively in his own learning and the adults support his autonomy while extending his world and sensitizing him to the meanings of his experiences. The teaching is diagnostic with individualized followup. There is constant restructuring of the learning environment to adapt it to the special needs and emerging interests of the children, particularly their need for a positive sense of themselves.

In this model academic skills are acquired within a broad context of planned activities that provide appropriate ways of expressing and organizing children's interests in the themes of home and school, and gradually extend these interests to the larger community. The classroom is organized into work areas filled with stimulating materials that allow a wide variety of motor and sensory experiences, as well as opportunities for independent investigation in cognitive areas and for interpreting experience through creative media such as dramatic play, music, and art. The cognitive areas of primary concern are the capacity to probe, to reason, and to solve problems. Teachers and paraprofessionals working as a team surround the children with language that they learn as a useful, pleasurable tool. Math, too, is highly functional and pervades the curriculum. The focus is on tasks that are satisfying in terms of the child's own goals and productive for his cognitive and affective development.

Bank Street supports parent involvement in each community by providing materials interpreting the program and special consultants, as well as by joint planning for home-school interaction. Parents participate in the classroom, in social and community activities related to the school, and as members of the local Policy Advisory Committee. Parents may receive career development training with either graduate or undergraduate credit. Parents and teachers pool their understanding of each child's interests, strengths, and needs as they plan his educational experiences in and out of school.

Staff development is an ever-evolving process for administrators, teachers, paraprofessionals, and local supportive and sponsor staff. It is conducted both on site and at the College. Programs are geared to the specific needs of each project and are guided by a sponsor field representative familiar with the history and dynamics of a given community in cooperation with local staff. Self-analysis is stressed in both the teaching and administrative areas. Bank Street's 50 years of experimentation as a multidisciplinary education center has demonstrated that a flexible, child-oriented program requires more, not less, planning and study. Staff development aims at providing a repertoire of teaching strategies from which to choose on the basis of the adult's increased understanding of individual children.

In moving from the broad, conceptual framework to the specifics of implementation, Bank Street supplies diagnostic tools for assessing child behavior, child-adult interaction, the physical and social milieu of the classroom, and the totality of model implementation. These instruments are used by trained observers and in self-analysis to increase model effectiveness and stimulate joint planning of changes needed in the classroom and in teaching behavior, community relations, parent involvement, and administrative practices.

In addition to continuing services on site, Bank Street develops slides, films, video tapes, and other materials for adult education. These supplement the materials developed for use in the classroom, such as the Bank Street Basal Readers and Language Stimulation Materials. Field representatives, resource persons, program analysts, and materials specialists meet weekly with the Director of the Bank Street program to share experiences, continue conceptual development of the sponsor's role, and to plan institutes and workshops differentiated on the basis of requirements of specific communities and participants.

Individual Project Results

Eight samples from five different projects of Bank Street College (BC) were included in the analysis of interim effects. The distribution of these evaluation samples in terms of cohort, outcome, and project is as follows:

Cohort	First-Year Effects	Second-Year Effects
IK		(projects a, b, c, and e)
IEF	(project d)	(project d)
IIK	(project c)	
IIEF	(project d)	

Project BC(b)

Table 33 presents the analysis data for Project BC(b)--a Cohort I-K, two year effects sample. This project is located in a mixed ethnic community (25 percent Black) within a large eastern megalopolis (population SMSA = 16,207,000). It was moderately small (500 pupils) with an anticipated per pupil expenditure of $808 and about one PAC member per 20 pupils.

On the basis of the control variables, the seven FT and six NFT classrooms appear reasonably well matched. They are nearly equivalent on baseline measures, and the FT families appear only slightly more disadvantaged than NFT. Also, teachers in the two samples appear comparable except on experience, aid, and autonomy.

Outcome analyses show NFT significantly above FT on the affect measure (95 percent confidence interval = 1.1 to 4.1 units), WRAT score (95 percent confidence interval = .6 to 16.2 points), and reading skills (95 percent confidence level = .5 to 14.7 points). Other measures also favor NFT but do not reach significance. Differences in parent outcomes were not significant. NFT teachers scored significantly higher on parent image than did FT teachers.

The net consensus of evidence for Project BC(b) is unfavorable to the model. On all measures, NFT groups scored either significantly better or slightly better than FT groups. However, both FT and NFT averages in general appear higher than other Bank Street Cohort I-K projects in this interim sample. No classroom observation data are available to provide clues regarding whether or not the model was well implemented. Since the FT and NFT samples appear reasonably well matched and since some FT-favoring covariable adjusting does occur, these outcomes must be considered as reflecting poorly on the impact of FT as implemented in this project.

Project BC(e)

Table 34 presents the analysis data for Project BC(e), which is also a CI-K, two-year effects sample. Located within a moderately small SMSA (371,000) in the south Atlantic region, the project is within a racially mixed community (44 percent nonwhite), is moderately large, and had a rather high anticipated per pupil expenditure of $1140. On the average, there was one PAC member per 16 pupils.

The six FT and six NFT classes are moderately well matched in terms of pupil baseline test scores and classroom composition, but the groups differ widely on preschool experience (FT = 94 percent, NFT = 0 percent).

TABLE 33

PROJECT DATA TABLE--BANK STREET COLLEGE PROJECT B, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
				PART I CHILD EVALUATION										
NO. OF CLASSROOMS	7	6	1	OVERALL ACHIEVEMENT	117.6	134.5	-16.9	125.7	138.6	-12.9	7.33	-27.3	1.5	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	11.3	4.3	7.0											
QUANT. PRESCORE	18.2	17.7	0.5	AFFECT	16.4	18.3	-1.9	15.6	18.2	-2.6	0.77	-4.1	-1.1	
COG. PROCESS PRESCORE	4.3	4.7	-0.4											REGION . . . . MIDDLE ATLANTIC
READING PRESCORE	34.1	34.5	-0.4	ATTENDANCE	11.4	13.0	-1.6	12.0	13.3	-1.3	2.40	-6.0	3.4	
LANGUAGE PRESCORE	8.3	8.9	-0.6											DISTANCE TO NEAREST SMSA . . WITHIN
AFFECT PRESCORE	16.9	15.2	1.7	WRAT TOTAL	70.7	82.0	-11.3	74.8	83.2	-8.4	3.96	-16.2	-.6	
AGE (JUNE '71)	84.0	83.4	0.6											SIZE OF NEAREST SMSA 16,207,000
% CLASSROOM MALE	28.7	29.5	-0.8	QUANTITATIVE	32.8	38.3	-5.5	36.2	40.4	-4.2	2.35	-8.8	.4	
% CLASSROOM BLACK	99.2	100.0	-0.8											PERCENT NONWHITE 25
% PRESCHOOL (OR NO. MOS.)	99.1	75.0	24.1	COGNITIVE PROCESSES	6.7	6.5	0.2	7.0	6.6	0.4	0.44	-.5	1.3	
% PARENTS W/O HS DIPL.	55.6	43.7	11.9											PROJECT SIZE (PUPILS) . . . 500
% PARENTS W SKILLED OCCUP.	44.5	52.2	-7.7	READING SKILLS	51.9	61.4	-9.5	55.2	62.8	-7.6	3.64	-14.7	-.5	
% PARENTS BLACK	97.7	100.0	-2.3											NO. PUPILS/PAC MEMBER . . . 23.8
% PARENTS POVERTY ELIGIBLE	47.5	69.1	-21.6	LANGUAGE ARTS	26.2	28.3	-2.1	27.3	28.9	-1.6	2.02	-5.6	2.4	
% HEAD HOUSEHOLD EMPLOYED	80.7	72.6	8.1											FT PER-PUPIL EXPENDITURE . . 808
% HEAD HOUSEHOLD MALE	71.9	50.4	21.5											
				PART II PARENT EVALUATION DATA										
NO. CLASSROOM GROUPS	5	5	0	PARENT-CHILD										CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT
AV. PARENTS/CLASSRM GRP	14.8	4.8	10.0	INTERACT	.198	.369	-.171	.147	.304	-.157	.270	-.69	.37	
% W/O HIGH SCHOOL DIPLOMA	55.6	42.4	13.2											
% W SKILLED OCCUP.	44.5	52.6	-8.1	PARENT-SCHOOL										
% POS EVAL OF CHILD LRNG	75.0	83.3	-8.3	INVOLVE	.616	-.127	.743	.257	-.408	.665	.365	-.05	1.38	
% BLACK	97.7	100.0	-2.3											
% REPORTING USE OF PRESCHOOL	98.7	80.0	18.7	CHILD ACADEMIC										
% POVERTY ELIGIBLE	47.5	62.9	-15.4	EXPECT	.121	.078	.043	.388	.203	.185	.378	-.50	.93	
% HEAD HOUSEHOLD EMPLOYED	80.7	67.1	13.6											
% HEAD HOUSEHOLD MALE	71.8	50.4	21.4	SENSE OF CONTROL	.187	-.130	.317	-.017	-.305	.288	.358	-.41	.99	
				PART III TEACHER EVALUATION DATA										
NO. OF CLASSROOMS	5	4	1	PARENT-EDUCATOR										
JOB SATISF. RATING	1.7	1.9	-0.2	IMAGE	0.34	0.55	-0.21	0.18	0.59	-0.41	0.185	-.77	-.05	
BOOK RESOURCE SCALE	3.8	3.7	0.1											
RACE (BLACK/NONBLACK)	1.0	0.5	0.5	PROFESSION. ACCEPT										
IDENT. W. COMMUNITY	0.8	1.0	-0.2	OF METHOD	1.40	1.50	-0.10	1.67	1.38	0.29	0.258	-.22	.80	
NO. OF HELPERS	2.4	0.7	1.7											
ABLE TO CHOOSE ASSIGNMENT	2.2	1.2	1.0											
TRNG & TEACHER EXPER	7.2	5.2	2.0											

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 34

PROJECT DATA TABLE--BANK STREET COLLEGE PROJECT E, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	6	6	0	OVERALL ACHIEVEMENT	103.4	113.9	-10.5	112.1	109.8	2.3	8.40	-14.2	18.8	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	14.2	11.0	3.2											
QUANT. PRESCORE	18.6	18.4	0.2	AFFECT	16.8	18.5	-1.7	16.8	18.8	-2.0	0.88	-3.7	-.3	REGION . . . . SOUTH ATLANTIC
COG. PROCESS PRESCORE	4.8	5.2	-0.4											
READING PRESCORE	30.1	33.2	-3.1	ATTENDANCE	14.9	13.1	1.8	15.1	14.6	0.5	2.75	-4.9	5.9	DISTANCE TO NEAREST SMSA . . WITHIN
LANGUAGE PRESCORE	8.7	10.5	-0.8											
AFFECT PRESCORE	15.6	16.5	-0.9	WRAT TOTAL	63.3	68.7	-5.4	67.0	66.5	0.5	4.53	-8.4	9.4	SIZE OF NEAREST SMSA 371,000
AGE (JUNE '71)	84.1	83.1	1.0											
% CLASSROOM MALE	43.2	52.5	-9.3	QUANTITATIVE	33.8	36.8	-3.0	36.8	35.6	1.2	2.69	-4.1	6.5	PERCENT NONWHITE 44
% CLASSROOM BLACK	92.9	86.4	6.5											
% PRESCHOOL (OR NO. MOS.)	94.0	0	94.0	COGNITIVE PROCESSES	6.0	6.5	-0.5	6.3	6.5	-0.2	0.50	-1.2	.8	PROJECT SIZE (PUPILS) . . . 600
% PARENTS W/O HS DIPL.	67.8	75.3	-7.5											
% PARENTS W SKILLED OCCUP.	28.2	23.7	4.5	READING SKILLS	42.0	47.5	-5.5	45.4	45.4	0	4.16	-8.2	8.2	NO. PUPILS/PAC MEMBER . . . 16.1
% PARENTS BLACK	92.7	80.5	12.2											
% PARENTS POVERTY ELIGIBLE	84.0	56.8	27.2	LANGUAGE ARTS	21.7	23.2	-1.5	23.7	22.3	1.4	2.3	-3.1	5.9	FT PER-PUPIL EXPENDITURE . . 1,140
% HEAD HOUSEHOLD EMPLOYED	65.0	79.3	-14.3											
% HEAD HOUSEHOLD MALE	39.9	79.6	-39.7											
				PART II PARENT EVALUATION DATA										CLASSROOM DATA* NOT AVAILABLE FOR THIS PROJECT
NO. CLASSROOM GROUPS	6	6	0	PARENT-CHILD										
AV. PARENTS/CLASSRM GRP	11.7	7.7	4.0	INTERACT	.167	-.179	.346	.283	-.312	.595	.280	.05	1.14	
% W/O HIGH SCHOOL DIPLOMA	67.8	75.3	-7.5											
% W SKILLED OCCUP.	28.2	23.7	4.5	PARENT-SCHOOL										
% POS EVAL OF CHILD LRNG	77.9	52.3	25.6	INVOLVE	.193	-.680	.873	.009	-.319	.328	.380	-.42	1.07	
% BLACK	92.7	80.5	12.2											
% REPORTING USE OF PRESCHOOL	92.8	0	92.8	CHILD ACADEMIC										
% POVERTY ELIGIBLE	84.0	56.8	27.2	EXPECT	-.033	-.388	.355	.053	.138	-.085	.393	-.86	.69	
% HEAD HOUSEHOLD EMPLOYED	65.0	79.3	-14.3											
% HEAD HOUSEHOLD MALE	39.9	79.6	-39.7	SENSE OF CONTROL	.195	.118	.077	.034	.319	-.285	.372	-1.01	.44	
				PART III TEACHER EVALUATION DATA										
NO. OF CLASSROOMS	6	6	0	PARENT-EDUCATOR										
JOB SATISF. RATING	1.5	1.4	0.1	IMAGE	0.14	0.41	-0.27	0.05	0.41	-0.36	0.158	-.67	-.05	
BOOK RESOURCE SCALE	3.5	3.8	-0.3											
RACE (BLACK/NONBLACK)	0.3	1.0	-0.7	PROFESSION. ACCEPT										
IDENT. W. COMMUNITY	0.5	1.0	-0.5	OF METHOD	2.00	1.33	0.67	2.10	1.59	0.51	0.220	.08	.94	
NO. OF HELPERS	1.7	1.7	0											
ABLE TO CHOOSE ASSIGNMENT	0	2.0	-2.0											
TRNG & TEACHER EXPER	4.6	5.3	-0.7											

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*See "Guide for Interpretation of Results" for explanation of table entries.

Also, as was often the case, FT families are more disadvantaged than NFT families. Teachers, however, appear quite closely matched on all measures except choice of assignment, where, in contrast to most projects, NFT teachers report more autonomy.

Results of outcome analyses (Table 34) show NFT pupils significantly above FT pupils on the affect measure with no other pupil differences approaching significance. The difference on the parent child interaction measure is significant in favor of FT parents. Also, FT teachers show significantly more approval and acceptance of their methods than NFT teachers.

These Project BC(e) results are mixed and perplexing. Since this project was not included in the classroom observation sample, descriptions of processes are not available to assist in interpretation. However, it does seem clear that this project is failing to attain at least one major goal of the model--that of developing positive pupil affect. On the other hand, the parent and teacher goals are being attained to some extent, as evidenced by the significant results in these areas.

Project BC(a)

Data for Project BC(a), a Cohort I-K sample, are summarized in Table 35. Even though this project only marginally qualifies for inclusion in the analysis and evaluation, we are including the findings for purposes of completeness.

The project is small (240 pupils) and suburban to a relatively small SMSA (63,000) in the New England region. The community is 99 percent white, the projected FT expenditure was $862 per pupil, and the PAC ratio was one member per 10 pupils.

The FT and NFT groups are badly matched; pupils in the three FT classes average about nine months older than those in the two NFT classes. Nevertheless, the FT group scored only slightly better than the NFT group on baseline tests. The NFT classes are nearly 75 percent girls, whereas the FT classes are about 50 percent female. Although data problems prevented parent and teacher analyses, parent data are summarized for the pupils. As can be seen, FT families are substantially more disadvantaged than NFT families (less education, lower occupational levels, lower income, less employment, and fewer male heads of household).

Results of the outcome analyses for this project show that FT scored significantly higher than the NFT pupils on the cognitive process

TABLE 35

PROJECT DATA TABLE--BANK STREET COLLEGE PROJECT A, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						PROCESS DATA	
												CONFIDENCE INTERVAL			
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH		
				PART I CHILD EVALUATION DATA											
NO. OF CLASSROOMS	3	2	1	OVERALL ACHIEVEMENT	119.7	139.5	-19.8	121.1	138.5	-17.4	12.60	-42.1	7.3	PROJECT DESCRIPTORS	
AVERAGE PUPILS/CLASSROOM	12.0	5.0	7.0												
QUANT. PRESCORE	20.2	16.9	3.3	AFFECT	18.1	17.6	0.5	18.0	17.7	0.3	1.32	-2.3	2.9	REGION	NEW ENGLAND
COG. PROCESS PRESCORE	6.1	6.6	-0.5												
READING PRESCORE	32.9	28.4	4.5	ATTENDANCE	7.2	5.2	2.0	4.8	2.9	1.9	4.12	-6.2	10.0	DISTANCE TO NEAREST SMSA . .	30-40 MILES
LANGUAGE PRESCORE	10.1	11.2	-1.1												
AFFECT PRESCORE	16.6	15.6	1.0	WRAT TOTAL	68.0	82.0	-14.0	71.2	83.7	-12.5	6.80	-25.8	.8	SIZE OF NEAREST SMSA	63,000
AGE (JUNE '71)	84.7	75.4	9.3												
% CLASSROOM MALE	51.3	27.8	23.5	QUANTITATIVE	36.9	44.8	-7.9	35.9	42.9	-7.0	4.04	-14.9	.9	PERCENT NONWHITE	1
% CLASSROOM BLACK	0	0	0												
% PRESCHOOL (OR NO. MOS.)	61.3	11.1	50.2	COGNITIVE PROCESSES	7.5	5.7	1.8	7.3	5.6	1.7	0.75	.2	3.2	PROJECT SIZE (PUPILS) . . .	240
% PARENTS W/O HS DIPL.	44.9	12.5	32.4												
% PARENTS W SKILLED OCCUP.	53.5	75.0	-21.5	READING SKILLS	48.8	58.9	-10.1	51.4	59.8	-8.4	6.24	-20.6	3.8	NO. PUPILS/PAC MEMBER . . .	9.6
% PARENTS BLACK	0	0	0												
% PARENTS POVERTY ELIGIBLE	39.0	0	39.0	LANGUAGE ARTS	26.9	30.3	-3.4	26.7	30.0	-3.3	3.47	-10.1	3.5	FT PER-PUPIL EXPENDITURE . .	862
% HEAD HOUSEHOLD EMPLOYED	83.1	100.0	-16.9												
% HEAD HOUSEHOLD MALE	82.1	100.0	-17.9												
														CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT	

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

measure (95 percent confidence interval = .2 to 3.2 points). Although no other differences reached significance, a large NFT-favoring difference on the WRAT approached the 5 percent confidence level. The evidence of positive effects of this FT project is considered marginal.

Project BC(c)

Project BC(c) is a relatively small project (292 pupils) located within a moderate sized SMSA (601,000) in the mid-Atlantic region. The anticipated FT expenditure is relatively high, averaging $1,250 per pupil, with a pupil/PAC ratio of 8.6. Two cohort samples were gathered from this project--I-K (two year) and II-K (one-year). Both of these samples were included in the classroom observation activities.

The analysis data for the Cohort I, two-year effects sample are summarized in Table 36. These data show that the five FT and four NFT classrooms were reasonably comparable on baseline test scores, but not on classroom compositions. FT classes had higher proportions of male pupils, lower proportions of Blacks, and a much higher proportion of pupils with preschool experience than the NFT classes. The families, however, were moderately similar except that the FT families tended to be somewhat more disadvantaged (lower relative educational level, income, occupational level, and employment, and fewer male heads of households). Teachers of the two groups were also moderately alike on inputs although FT teachers were less satisfied with their working conditions, had fewer book resources, less training and experience, less choice of assignment, and fewer helpers than NFT teachers. This profile is quite unusual, since in other projects FT teachers tend to exceed NFT teachers on many or all of these variables.

In the outcome analysis, FT pupils scored significantly better in quantitative skills (95 percent confidence interval = 3.6 to 15.0 points). No other pupil results reached significance, although the FT pupils tended to do better.

None of the results for parents or teachers were statistically significant. On classroom observation factors, FT and NFT share similar patterns of scores, but FT is consistently higher than NFT, especially on the self-regulatory factor, which is emphasized in the model. The pattern would correspond better with the Bank Street model if the differences on the self-regulatory and expressive factors were even more pronounced. But the five factors are not as salient for this model as they are for most other models (cf. SRI, 1972b, Appendix B). Selected variables from several factors, such as small groups, wide

TABLE 36

PROJECT DATA TABLE--BANK STREET COLLEGE PROJECT C, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	4	1	OVERALL ACHIEVEMENT	123.3	123.7	-0.4	137.1	128.3	8.8	8.99	-8.8	26.4
AVERAGE PUPILS/CLASSROOM	11.0	9.5	1.5										
QUANT. PRESCORE	17.8	18.5	-0.7	AFFECT	17.1	16.3	0.8	17.2	16.2	1.0	0.95	-.9	2.9
COG. PROCESS PRESCORE	5.1	4.7	0.4										
READING PRESCORE	27.6	34.0	-6.4	ATTENDANCE	13.1	11.0	2.1	13.6	11.7	1.9	2.94	-3.9	7.7
LANGUAGE PRESCORE	7.9	7.7	0.2										
AFFECT PRESCORE	15.6	16.4	-0.8	WRAT	69.9	72.4	-2.5	76.8	74.6	2.2	4.86	-7.3	11.7
AGE (JUNE '71)	85.2	85.2	0										
% CLASSROOM MALE	59.9	37.1	22.8	QUANTITATIVE	42.5	35.3	7.2	46.9	37.6	9.3	2.89	3.6	15.0
% CLASSROOM BLACK	75.6	97.2	-21.6										
% PRESCHOOL (OR NO. MOS.)	79.4	24.4	55.0	COGNITIVE PROCESSES	7.3	7.7	-0.4	7.7	7.9	-0.2	0.54	-1.3	.9
% PARENTS W/O HS DIPL.	65.3	56.9	8.4										
% PARENTS W SKILLED OCCUP.	21.1	29.8	-8.7	READING SKILLS	50.4	54.2	-3.8	56.5	56.0	0.5	4.46	-8.2	9.2
% PARENTS BLACK	80.7	95.9	-15.2										
% PARENTS POVERTY ELIGIBLE	66.9	53.7	13.2	LANGUAGE ARTS	23.2	26.6	-3.4	26.2	26.9	-0.7	2.48	-5.6	4.2
% HEAD HOUSEHOLD EMPLOYED	59.5	62.2	-2.7										
% HEAD HOUSEHOLD MALE	36.9	58.0	-21.1										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	5	2	3	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	10.0	15.0	-5.0	INTERACT	-.153	-.342	.189	-.038	-.446	.408	.359	-.30	1.11
% W/O HIGH SCHOOL DIPLOMA	65.3	54.2	11.1										
% W SKILLED OCCUP.	21.1	32.3	-11.2	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	80.1	53.3	26.8	INVOLVE	.507	-.336	.843	.427	-.308	.735	.486	-.22	1.69
% BLACK	80.7	100.0	-19.3										
% REPORTING USE OF PRESCHOOL	79.4	43.2	36.2	CHILD ACADEMIC									
% POVERTY ELIGIBLE	66.9	52.0	14.9	EXPECT	.239	-.033	.272	.196	.563	-.367	.503	-1.35	.62
% HEAD HOUSEHOLD EMPLOYED	59.5	74.6	-15.1										
% HEAD HOUSEHOLD MALE	36.9	55.8	-18.9	SENSE OF CONTROL	-.168	-.734	.566	-.291	-.729	.438	.476	-.49	1.37
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	4	3	1	PARENT-EDUCATOR									
JOB SATISF. RATING	1.4	2.2	-0.8	IMAGE	0.50	0.57	-0.07	0.52	0.56	-0.04	0.196	-.42	.34
BOOK RESOURCE SCALE	2.2	3.6	-1.4										
RACE (BLACK/NONBLACK)	0.7	1.0	-0.3	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	1.0	0.5	0.5	OF METHOD	1.00	1.33	-0.33	1.13	1.35	-0.22	0.273	-.76	.32
NO. OF HELPERS	1.4	1.7	-0.7										
ABLE TO CHOOSE ASSIGNMENT	2.0	2.5	-0.5										
TRNG & TEACHER EXPER	4.5	4.7	-0.2										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA .	WITHIN
SIZE OF NEAREST SMSA . .	601,000
PERCENT NONWHITE	18
PROJECT SIZE (PUPILS) . .	292
NO. PUPILS/PAC MEMBER . .	8.6
FT PER-PUPIL EXPENDITURE .	1,250

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.12	-.74
CHILD-INITIATED INTERACTIONS	1.58	1.42
PROGRAMMED ACADEMIC . . .	.20	-.38
EXPRESSIVE	.55	-.09
CHILD SELF-LEARNING . . .	-.39	-.73

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*See "Guide for Interpretation of Results" for explanation of table entries.

variety of activities, reinforcement, use of objects, independence, and self-expression, would more nearly describe the Bank Street program. In any case, the pattern of process factors does not provide assistance in the interpretation of the single instance of FT superiority on the quantitative outcome measure.

Project data from the Cohort II sample in Project BC(c) provide additional evidence of FT/NFT lack of comparability. These data, presented in Table 37 show that the four FT and three NFT classes are poorly matched on ethnic composition. Moreover, NFT families appeared more disadvantaged than FT families as defined by the conventional indicators of education, occupation, and poverty level, although the heads of household were more often male and more often employed than the FT heads of household. Insufficient teacher data prevented analyses of teacher effects, but process data were available since the classrooms were included in the CO sample.

Analysis of one-year effects for this sample failed to reveal significant FT/NFT differences on any of the pupil or parent outcomes. However, the FT pupils did somewhat better on all tests (adjusted scores), and on the quantitative measure, the difference between their scores and those of the NFT group approaches statistical significance. Process factor score averages show FT above NFT on the self-regulatory and child self-learning factors but close to NFT on the expressive dimension. The low expressive factor score for FT and the lower score for FT than NFT on the programmed academic dimension give a mixed picture of implementation of the model. The classroom observation scores do not serve to clarify our understanding of the pupil test scores for this cohort.

Project BC(d)

The remaining Bank Street project supplied evaluative data for analysis of three groups--a Cohort I, second-year, a Cohort I, first-year subset, and a Cohort II, first year. This fairly large project (892 pupils) consists of entering first grade pupils in a predominantly nonwhite community in a small east-south central community. None of the classrooms participating in this analysis were included in the classroom observation sample; thus, no process data are available.

The data for the Cohort I sample are summarized in Table 38 for the two-year effects and in Table 39 for the one-year subset. A total of nine FT and four NFT classes were tested and appear highly comparable both on baseline test scores and classroom composition (with the exception of preschool experience, which was much more prevalent among

TABLE 37

PROJECT DATA TABLE--BANK STREET COLLEGE PROJECT C, COHORT II, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1970-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	3	1	OVERALL ACHIEVEMENT	103.5	104.5	-1.0	107.7	98.2	9.5	10.86	-11.8	30.8
AVERAGE PUPILS/CLASSROOM	14.8	5.0	9.8										
QUANT. PRESCORE	15.0	15.4	-0.4	AFFECT	16.0	16.4	-0.4	16.0	15.8	0.2	1.58	-2.9	3.3
COG. PROCESS PRESCORE	4.8	4.8	0										
READING PRESCORE	21.1	25.6	-4.5	ATTENDANCE	21.8	16.4	5.4	21.3	13.3	8.0	5.17	-2.1	18.1
LANGUAGE PRESCORE	12.3	12.8	-0.5										
AFFECT PRESCORE	15.6	16.6	-1.0	WRAT TOTAL	47.5	47.1	0.4	48.6	41.0	7.6	7.57	-7.2	22.4
AGE (JUNE '71)	74.3	73.1	1.2										
% CLASSROOM MALE	52.9	49.6	3.3	QUANTITATIVE	29.1	27.4	1.7	29.3	24.9	4.4	3.16	-1.8	10.6
% CLASSROOM BLACK	75.7	100.0	-24.3										
% PRESCHOOL (OR NO. MOS.)	7.3	0.2	7.1	COGNITIVE PROCESSES	7.5	6.8	0.7	7.7	6.7	1.0	0.69	-.4	2.4
% PARENTS W/O HS DIPL.	67.3	79.3	-12.0										
% PARENTS W SKILLED OCCUP.	28.8	9.1	19.7	READING SKILLS	49.1	53.2	-4.1	52.0	48.3	3.7	7.04	-10.1	17.5
% PARENTS BLACK	75.7	98.1	-22.4										
% PARENTS POVERTY ELIGIBLE	48.4	56.2	-7.8	LANGUAGE ARTS	17.9	17.2	0.7	18.6	17.8	0.8	1.61	-2.4	4.0
% HEAD HOUSEHOLS EMPLOYED	49.3	55.7	-6.4										
% HEAD HOUSEHOLD MALE	46.0	55.0	-9.0										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	4	3	1										
AV. PARENTS/CLASSRM GRP	14.8	11.0	3.8	PARENT-CHILD IMAGE	-.122	-.017	-.105	-.433	-.583	.150	.328	-.49	.79
% W/O HIGH SCHOOL DIPLOMA	67.3	79.3	-12.0										
% W SKILLED OCCUP.	28.8	9.1	19.7										
% POS EVAL OF CHILD LRNG	75.1	87.4	-12.3	PARENT-SCHOOL INVOLVE	.286	.067	.219	.153	.117	.036	.413	-.77	.85
% BLACK	75.7	98.1	-22.4										
% REPORTING USE OF PRESCHOOL	95.7	83.4	12.3										
% POVERTY ELIGIBLE	48.4	56.2	-7.8	CHILD ACADEMIC EXPECT	.043	.125	-.082	.117	-.003	.120	.310	-.49	.73
% HEAD HOUSEHOLD EMPLOYED	49.3	55.7	-6.4										
% HEAD HOUSEHOLD MALE	46.0	55.0	-9.0	SENSE OF CONTROL	-.099	-.422	.323	-.287	-.559	.272	.440	-.59	1.13

PROCESS DATA	
PROJECT DESCRIPTORS	
REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA .	WITHIN
SIZE OF NEAREST SMSA . . .	601,000
PERCENT NONWHITE	18
PROJECT SIZE (PUPILS) . . .	292
NO. PUPILS/PAC MEMBER . . .	8.6
FT PER-PUPIL EXPENDITURE .	1,250

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.38	-.20
CHILD-INITIATED INTERACTIONS	1.02	2.04
PROGRAMMED ACADEMIC	-.77	-.28
EXPRESSIVE	-.25	-.39
CHILD SELF LEARNING	-.66	-1.87

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 38

PROJECT DATA TABLE--BANK STREET COLLEGE PROJECT D, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA			
VARIABLE	FT	NFT	DIFF
NO. OF CLASSROOMS	9	4	5
AVERAGE PUPILS/CLASSROOM	16.4	16.3	0.1
QUANT. PRESCORE	28.6	28.0	0.6
COG. PROCESS PRESCORE	6.6	6.5	0.1
READING PRESCORE	60.2	61.0	-0.8
LANGUAGE PRESCORE	12.6	12.0	0.6
AFFECT PRESCORE	15.8	15.4	0.4
AGE (JUNE '71)	99.5	100.9	-1.4
% CLASSROOM MALE	52.0	49.5	2.5
% CLASSROOM BLACK	93.7	100.0	-6.3
% PRESCHOOL (OR NO. MOS.)	95.6	44.7	50.9
% PARENTS W/O HS DIPL.	67.4	95.2	-27.8
% PARENTS W SKILLED OCCUP.	15.4	5.5	9.9
% PARENTS BLACK	93.8	100.0	-6.2
% PARENTS POVERTY ELIGIBLE	82.8	90.7	-7.9
% HEAD HOUSEHOLD EMPLOYED	68.8	76.0	-7.2
% HEAD HOUSEHOLD MALE	64.5	76.4	-11.9
NO. CLASSROOM GROUPS	9	4	5
AV. PARENTS/CLASSRM GRP	9.6	14.0	-4.4
% W/O HIGH SCHOOL DIPLOMA	67.4	95.2	-27.8
% W SKILLED OCCUP.	15.4	5.5	9.9
% POS EVAL OF CHILD LRNG	71.6	60.1	11.5
% BLACK	93.8	100.0	-6.2
% REPORTING USE OF PRESCHOOL	95.6	44.7	50.9
% POVERTY ELIGIBLE	82.8	90.7	-7.9
% HEAD HOUSEHOLD EMPLOYED	68.8	76.0	-7.2
% HEAD HOUSEHOLD MALE	64.5	76.4	-11.9

OUTCOME DATA				ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
PART I CHILD EVALUATION DATA									
OVERALL ACHIEVEMENT	132.7	115.8	16.9	141.6	121.5	20.1	10.27	-.03	40.2
AFFECT	18.2	17.8	0.4	18.2	18.5	-0.3	0.67	-1.6	1.0
ATTENDANCE	6.5	10.1	-3.6	6.2	9.2	-3.0	3.40	-9.7	3.7
WRAT TOTAL	94.5	92.7	1.8	97.6	94.9	2.7	4.42	-6.0	11.4
QUANTITATIVE	40.8	33.6	7.2	42.0	34.0	8.0	3.09	1.9	14.1
READING SKILLS	71.1	63.2	7.9	76.3	66.6	9.7	6.82	-3.7	23.1
LANGUAGE ARTS	20.3	19.1	1.2	22.8	20.8	2.0	2.04	-2.0	6.0
PART II PARENT EVALUATION DATA									
PARENT-CHILD INTERACT	-.071	-.382	.311	-.901	-.265	.176	.329	-.47	.82
PARENT-SCHOOL INVOLVE	-.066	-.553	.487	-.552	-.472	-.080	.335	-.74	.58
CHILD ACADEMIC EXPECT	-.075	.082	-.157	-.469	.465	-.934	.331	-1.58	-.29
SENSE OF CONTROL	.054	-.199	.253	.072	-.352	.424	.322	-.21	1.06

PROCESS DATA

PROJECT DESCRIPTORS

REGION	EAST SOUTH CENTRAL
DISTANCE TO NEAREST SMSA . .	30-40 MILES
SIZE OF NEAREST SMSA	139,000
PERCENT NONWHITE	81
PROJECT SIZE (PUPILS) . . .	892
NO. PUPILS/PAC MEMBER . . .	25.0
FT PER-PUPIL EXPENDITURE . .	881

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 39

PROJECT DATA TABLE--BANK STREET COLLEGE PROJECT D, COHORT I, ENTERING FIRST GRADE: ONE-YEAR EFFECTS,
1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	9	4	5	OVERALL ACHIEVEMENT	131.8	129.6	2.2	132.2	131.4	.8	3.60	-6.3	7.9
QUANT. PRESCORE	28.6	28.0	.6										
COG. PROCESS PRESCORE	6.6	6.5	.1	AFFECT	16.9	16.6	.3	15.1	13.4	1.7	1.14	-.5	3.9
READING PRESCORE	60.2	61.0	-.8										
LANGUAGE PRESCORE	12.6	12.0	.6	ATTENDANCE	8.6	9.0	-.4	9.2	15.0	-5.8	3.12	-11.9	.3
AFFECT PRESCORE	15.8	15.4	.4										
AGE (JUNE '71)	99.5	100.9	-1.4	WRAT TOTAL	64.1	63.5	.6	65.4	64.9	.5	2.61	-4.6	5.6
% CLASSROOM MALE	52.0	49.5	2.5										
% CLASSROOM BLACK	93.7	100.	-6.3	QUANTITATIVE	35.1	33.7	1.4	34.8	34.4	.4	1.10	-1.8	2.6
% PRESCHOOL (OR NO. MOS.)	95.6	44.7	50.9										
% PARENTS W/O HS DIPL.	67.4	95.2	-27.8	COGNITIVE PROCESSES	8.1	7.8	.3	7.8	8.2	-.4	.41	-1.2	.4
% PARENTS W/SKILLED OCCUP.	15.4	5.5	9.9										
% PARENTS BLACK	93.8	100.	-6.2	READING SKILLS	71.6	72.5	-.9	72.3	71.9	.4	2.86	-5.2	6.0
% PARENTS POVERTY ELIGIBLE	82.8	90.7	-7.9										
% HEAD HOUSEHOLD EMPLOYED	68.8	76.1	-7.2	LANGUAGE ARTS	17.0	15.5	1.5	17.5	16.9	.6	-.76	-.9	2.1
% HEAD HOUSEHOLD MALE	64.5	76.4	-11.9										

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

FT pupils). Covariable data indicate that both FT and NFT families in this project were severely disadvantaged. The NFT parents reported less education, lower occupational status, and higher poverty eligibility than the FT group, although more NFT families had male heads of household and overall employment of head of household was higher for NFT. Because of insufficient data, teacher analyses were not performed on this sample.

Analysis of FT/NFT differences on pupil measures indicates that the program had a significant effect on quantitative skills. The 95 percent confidence interval for this result shows from 1.9 to 14.1 score points in favor of FT. Other differences failed to reach significance but the outcome on achievement came close enough (-.03 to 40.2 points) to warrant attention.

Parent results showed that FT parents have a lower appraisal of their children's success opportunities than do NFT parents. Since the Bank Street model attempts to involve parents in both classroom and PAC activities, this result is unexpected. Perhaps the FT parents are appraising their children more realistically, or perhaps their goals are higher than those of NFT parents. Previous studies of community involvement (Zurcher, 1970; Gurin & Gurin, 1970) make these explanations plausible. In any event, the outcome needs further study.

That the impact of this project is increasing becomes apparent when first year results are compared with second year results for the same children. This analysis (Table 39) shows virtually no difference between FT and NFT groups on all test measures, and a near-significant, FT-favoring difference on attendance at the end of one year of FT. After two years, however, tests of these same FT and comparison group pupils show that FT pupils are stronger on cognitive variables (quantitative difference reaching significance) and, again, on attendance.

This pattern of results can be explained at least two different ways. Either the model's effects gradually accumulate over time or the structure and implementation of the Bank Street program substantially improved between 1970 and 1971. Since Cohort II samples were measured in this project, we can determine which of these explanations seems most likely; if Cohort II, first year effects are stronger than Cohort I, first year effects, the improved implementation explanation would seem more plausible.

The Cohort II-EF results for Project BC(d) are summarized in Table 40. The baseline data indicate a moderately good match between FT and NFT classrooms on pupil scores, classroom composition, and family characteristics. The notable exceptions are the reading test score (NFT higher), preschool participation (FT much higher), and family leadership and employment (NFT more male household heads and higher proportion employed). Teacher characteristics were also quite similar with the only notable difference being the greater number of helpers for FT teachers.

Results are very strongly in favor of FT for this one-year sample. Significant differences appear on overall achievement, on WRAT, on reading, and on language skills. Differences on affect and quantitative skills also approach significance in favor of FT.

No parent effects reached significance, but teacher acceptance of FT approached significance at the 95 percent confidence interval (-.05 to 1.91). Hence, the principal impact of this program appears concentrated on pupil outcomes.

Since the outcomes for the Cohort II, one-year group are much stronger than the outcomes for the Cohort I, one-year group--in fact, resemble more closely the results for the Cohort I, two-year group--we prefer the interpretation that the project was better implemented in 1971 than it was in 1970.

Summary

The salient features of the Bank Street College approach can be summarized as follows:

Focus and Objectives--emphasizes long range objectives via child self-development

Child

Cognitive
- Develop competence in basic skills
- Develop ability to probe, to reason, to solve problems

Affective
- Develop capacity for enjoyment
- Develop positive self-image
- Develop self-direction
- Develop expressiveness

Curricular Approach
- Teacher's role that of facilitator
- Reinforcement primarily from teachers and aides
- Individual and small group focus
- Wide variety of activities provided
- Heavy emphasis on child self-expression and self-regulatory activity

TABLE 40

PROJECT DATA TABLE--BANK STREET COLLEGE PROJECT D, COHORT II, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1970-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	8	3	5	OVERALL ACHIEVEMENT	124.4	118.3	6.1	140.7	127.2	21.5	9.58	2.72	40.3
AVERAGE PUPILS/CLASSROOM	17.7	29.0	-11.3										
QUANT. PRESCORE	29.8	31.7	-1.9	AFFECT	16.8	16.9	-0.1	18.1	17.0	1.1	0.57	-.02	2.2
COG. PROCESS PRESCORE	7.7	8.3	-0.6										
READING PRESCORE	37.9	43.1	-5.2	ATTENDANCE	7.0	8.8	-1.8	8.6	4.5	4.1	3.43	-2.6	10.8
LANGUAGE PRESCORE	14.0	13.3	0.7										
AFFECT PRESCORE	15.3	15.0	0.3	WRAT TOTAL	74.4	66.7	7.7	82.4	67.3	15.1	6.01	3.3	26.9
AGE (JUNE '71)	87.4	88.2	-0.8										
% CLASSROOM MALE	48.8	52.2	-3.4	QUANTITATIVE	44.7	42.2	2.5	53.5	45.7	7.8	4.08	-0.2	15.8
% CLASSROOM BLACK	95.2	91.5	3.7										
% PRESCHOOL (OR NO. MOS.)	5.5	0.6	4.9	COGNITIVE PROCESSES	8.8	8.6	0.2	9.2	8.7	0.5	1.52	-2.5	3.5
% PARENTS W/O HS DIPL.	75.4	84.0	-8.6										
% PARENTS W SKILLED OCCUP.	23.7	18.7	4.9	READING SKILLS	71.1	67.6	3.5	86.0	72.8	13.2	5.33	2.8	23.6
% PARENTS BLACK	90.5	90.2	0.3										
% PARENTS POVERTY ELIGIBLE	68.4	68.3	0.1	LANGUAGE ARTS	21.7	19.6	2.1	25.4	21.1	4.3	2.11	0.2	8.4
% HEAD HOUSEHOLD EMPLOYED	68.5	89.5	-21.0										
% HEAD HOUSEHOLD MALE	55.3	84.2	-28.9										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	8	3	5										
AV. PARENTS/CLASSROOM GRP	10.4	13.0	-2.6	PARENT-CHILD INTERACT	.245	-.082	.327	.345	.039	.306	.511	-.70	1.31
% W/O HIGH SCHOOL DIPLOMA	75.4	84.0	-8.6										
% W SKILLED OCCUP.	23.7	18.7	4.9										
% POS EVAL OF CHILD LANG	73.0	82.1	-9.1	PARENT-SCHOOL INVOLVE	.113	-.676	.789	.014	-.442	.456	.808	-.09	2.04
% BLACK	95.5	95.2	0.3										
% REPORTING USE OF PRESCHOOL	83.9	6.2	77.7										
% POVERTY ELIGIBLE	68.4	68.3	0.1	CHILD ACADEMIC EXPECT	.244	.241	.003	.028	-.028	.056	.556	-1.03	1.15
% HEAD HOUSEHOLD EMPLOYED	68.5	89.5	-21.0										
% HEAD HOUSEHOLD MALE	55.3	84.2	-28.9	SENSE OF CONTROL	-.170	-.192	.022	.009	-.170	.179	.584	-0.97	1.32
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	7	2	5										
JOB SATISF. RATING	2.0	1.5	0.5	PARENT-EDUCATOR IMAGE	0.37	0.43	-0.06	-0.17	0.32	-0.49	0.461	-1.39	+.41
BOOK RESOURCE SCALE	3.3	3.5	-0.2										
RACE (BLACK/NONBLACK)	0	0.5	-0.5										
IDENT. W. COMMUNITY	0.7	0.5	0.2	PROFESSION, ACCEPT OF METHOD	2.00	1.00	1.00	2.09	1.16	0.93	0.500	-.05	1.91
NO. OF HELPERS	2.9	0	2.9										
ABLE TO CHOOSE ASSIGNMENT	0.3	1.0	-0.7										
TRNG & TEACHER EXPER	5.8	5.0	0.8										

PROCESS DATA

PROJECT DESCRIPTORS

REGION . . . . EAST SOUTH CENTRAL

DISTANCE TO NEAREST SMSA . . . 30-40 MILES

SIZE OF NEAREST SMSA 139,000

PERCENT NONWHITE 81

PROJECT SIZE (PUPILS) 892

NO. PUPILS/PAC MEMBER 25.0

FT PER-PUPIL EXPENDITURE . . . 881

CLASSROOM DATA NOT AVAILABLE FOR
THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

Type of Parent Involvement

Inform parents about program

Parents participate in classrooms, PAC

Parents used as resource for teachers in planning educational experience of child

Evidence that the model is achieving its objectives is mixed from project to project, but some encouraging results were noted. These encouraging results include significant achievement gains in reading and language skills for entering first grade samples in Cohort II. Also, for the Cohort I, entering first grade sample a significant FT-favoring difference on quantitative skills occurred. However, these results are apparent primarily at the project level, since only for Cohort I, two-year data (kindergarten stream) is an across project summary analysis for this sponsor possible. The results of this analysis are summarized in Table 41 and show overall significant differences favoring the model on cognitive processes and on parent-school involvement measures. Teacher differences approached significance on professional acceptance of FT, and reached significance (NFT favoring) on the parent image measure. These findings indicate that for the Cohort I sample, the Bank Street College model has met with reasonable success in attaining its objectives of pupil gains and parent involvement. FT teachers, however, apparently hold less favorable attitudes regarding parent participation than do NFT teachers.

Process data, which describe activities, i.e., the way the model was implemented, varied from project to project, indicating a high degree of variability in the fidelity with which the approach was implemented. Because of this variability, it is very difficult to formulate a complete evaluation of the interim success of this approach. As mentioned earlier, we can state that the results appear encouraging.

TABLE 41

BANK STREET COLLEGE SUMMARY, COHORT I, KINDERGARTEN ENTERING PROJECTS: TWO YEAR EFFECTS, 1969-1971

				ADJUSTED OUTCOME DATA					
	UNADJUSTED MEANS							CONFIDENCE INTERVAL	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	120.2	125.8	-5.6	126.9	123.7	3.3	4.46	-5.4	12.0
AFFECT	17.6	17.8	-.2	17.6	18.0	-.4	.43	-1.2	.4
WRAT	71.2	75.4	-4.2	74.6	74.2	.4	2.48	-4.5	5.3
QUANTITATIVE	37.6	37.8	-.2	39.7	37.7	2.0	1.42	-.8	4.8
COG. PROCESS	7.0	6.7	.3	7.2	6.6	.5	.25	.0	1.0
READING	50.4	54.9	-4.5	53.3	53.8	-.4	2.23	-4.8	4.0
LANGUAGE	25.3	26.4	-1.1	26.8	25.7	1.1	1.20	-1.2	3.4
PARENT DATA									
PARENT-CHILD	.04	.04	.0	.01	-.01	.02	.13	-.24	.28
PARENT-SCHOOL	.43	-.37	.80	.37	-.37	.74	.19	.37	1.11
CHILD ACADEMIC EXPECTATION	-.04	-.16	.13	-.01	-.10	.09	.21	-.32	.50
SENSE OF CONTROL	-.01	-.12	.10	-.03	-.09	.06	.19	-.31	.43
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.38	.51	-.12	.28	.53	-.25	.09	-.43	-.07
PROFESSION. ACCEPT FT	1.62	1.43	.20	1.72	1.49	.24	.14	-.03	.51

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*See "Guide for Interpretation of Results" for explanation of table entries.

MATHEMAGENIC ACTIVITIES PROGRAM (MAP)
University of Georgia

Sponsor's Intended Approach

The MAP model emphasizes a scientific approach to learning based on teaching the child to make a coherent interpretation of reality. It adheres to the Piagetian perspective that cognitive and affective development are products of interactions between the child and the environment. It is not sufficient that the child merely copy his environment; he must be allowed to make his own interpretations in terms of his own level of development.

An activity-based curriculum is essential to this model since it postulates active manipulation and interaction with the environment as the basis for learning. Individual and group tasks are structured to allow each child to involve himself in them at physical and social as well as intellectual levels of his being. Concrete materials are presented in a manner that permits him to experiment and discover problem solutions in a variety of ways. The sponsor contends true learning cannot occur when tasks that exceed a child's level of development are forced on him. On the other hand, a child is attracted and challenged to learn by tasks representing the next step beyond his current experience and knowledge level. Both teaching techniques and curriculum materials emphasize sequential arrangement of tasks in small steps to create a stimulating discrepancy or "mismatch."

Thus, the mathemagenic classroom stresses learning by doing as well as individual initiative and decision-making on the part of the child. An attempt is made to maintain a careful balance between highly structured and relatively unstructured learning situations and between the level of conceptual material and the capability of individual children; small group instruction by teacher and aides is emphasized but with specific provisions for individual activity. This results in a great variety in the media employed, the activities available to the child, and in the social situations the child encounters.

The classroom is arranged to allow several groups of children to be engaged simultaneously in similar or different activities. Teachers' manuals including both recommended teaching procedure and detailed lesson plans for eight curriculum areas (K-3) are provided in the model. Learning materials also include educational games children can use without supervision in small groups or by themselves. Art, music, and physical education are considered mathemagenic activities of equal importance to language, mathematics, science, and social studies. Feelings of self-confidence and motivation to learn are viewed as natural consequences of the mathemagenic approach to learning.

Sponsor assistance to projects includes assignment of curriculum specialists to spend some time each month in continuous inservice teacher-aide training and a Project Advisor to coordinate the model with the other aspects of the Follow Through project, such as the Policy Advisory Committee, supporting services, and home-school activities. Preservice workshops are held during which teachers and teacher-aides gain experience using the curriculum materials and learn how to implement MAP principles. Second-year teachers and aides are expected to assume leadership roles in these training workshops, and parents and the Policy Advisory Committee are invited to all sessions. Parents and Follow Through staff work together during the year in the overall efforts in home-school coordination and in encouraging the local community to participate in the program.

Evaluation is a continual process. Project staff participate jointly in evaluating the effectiveness of various aspects of the program and in recommending improvements. Evaluative information is used in program development and for specifying, in observable terms, important dimensions of the program.

Individual Project Results

Only one project, which became an MAP project in 1969-70, was available for analysis of effects. This project sample consists of entering first grade pupils in Cohort I. The project is relatively small (397 pupils), in a predominantly white (3 percent nonwhite) community located 30 to 40 miles from a large urban SMSA in the south Atlantic region.

The data for the analysis of this project are summarized in Table 42. Baseline values on pupils, parents, and teachers indicate substantial lack of comparability between FT and NFT samples on many variables. Specifically, FT classes averaged below NFT classes on nearly all baseline tests. FT pupils also averaged several months older than the NFT pupils and, as is typical in this experiment, were more likely to have had preschool experience. The FT families tended to be more disadvantaged than NFT. Fewer FT heads of household had skilled occupations and were fully

Table 42

PROJECT DATA TABLE--UNIVERSITY OF GEORGIA PROJECT, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DI. F	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	3	2	OVERALL ACHIEVEMENT	158.7	179.3	-20.6	145.9	148.7	-2.8	12.89	-28.1	22.5
AVERAGE PUPILS/CLASSROOM	16.4	19.5	-3.1										
QUANT. PRESCORE	30.4	32.9	-2.5	AFFECT	18.8	17.7	1.1	19.1	18.5	0.6	0.84	-1.0	2.2
COG. PROCESS PRESCORE	7.0	7.9	-0.9										
READING PRESCORE	63.8	69.3	-5.5	ATTENDANCE	10.1	10.1	0	10.1	8.0	2.1	4.27	-6.3	10.5
LANGUAGE PRESCORE	13.9	13.3	0.6										
AFFECT PRESCORE	17.8	18.4	-0.6	WRAT TOTAL	104.4	111.9	-7.5	100.3	101.9	-1.6	5.55	-12.5	9.3
AGE (JUNE '71)	99.3	95.9	3.4										
% CLASSROOM MALE	54.0	60.8	-6.8	QUANTITATIVE	46.0	52.6	-6.6	41.0	44.5	-3.5	3.87	-11.1	4.1
% CLASSROOM BLACK	7.4	0	7.4										
% PRESCHOOL (OR NO. MOS.)	66.8	25.7	41.1	READING SKILLS	87.3	96.4	-9.1	81.0	80.0	1.0	8.55	-15.8	17.8
% PARENTS W/O HS DIPL.	71.6	71.8	-0.2										
% PARENTS W SKILLED OCCUP.	24.1	51.8	-27.7	LANGUAGE ARTS	25.4	30.3	-4.9	23.7	24.0	-0.3	2.56	-5.3	4.7
% PARENTS BLACK	7.4	0	7.4										
% PARENTS POVERTY ELIGIBLE	61.2	9.5	51.7										
% HEAD HOUSEHOLD EMPLOYED	89.0	100.0	-11.0										
% HEAD HOUSEHOLD MALE	90.4	100.0	-9.6										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	5	2	3	PARENT-CHILD									
AV. PARENTS/CLASSROOM GRP	10.6	10.0	0.6	INTERACT	.116	-.088	.204	.510	-.174	.684	.423	-.15	1.51
% W/O HIGH SCHOOL DIPLOMA	71.6	71.8	-.2										
% W SKILLED OCCUP.	24.1	51.8	-27.7	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	82.5	70.0	12.5	INVOLVE	-.192	-.536	.342	.066	.001	.065	.431	-.78	.91
% BLACK	7.4	0	7.4										
% REPORTING USE OF PRESCHOOL	66.9	38.6	28.3	CHILD ACADEMIC									
% POVERTY ELIGIBLE	61.2	9.5	51.7	EXPECT	-.192	-.115	-.077	-.231	.357	-.588	.425	-1.42	.24
% HEAD HOUSEHOLD EMPLOYED	89.0	100.0	-11.0										
% HEAD HOUSEHOLD MALE	90.4	100.0	-9.6	SENSE OF CONTROL	.213	-.083	.296	.422	.123	.299	.414	-.51	1.11
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	5	2	3	PARENT-EDUCATOR									
JOB SATISF. RATING	2.3	1.7	0.6	IMAGE	0.26	0.07	0.19	0.19	0.09	0.10	0.306	-.50	.70
BOOK RESOURCE SCALE	4.0	2.5	1.5										
RACE (BLACK/NONBLACK)	1.0	1.0	0	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	1.4	1.0	0.4	OF METHOD	1.60	1.50	0.10	1.81	1.31	0.50	0.459	-.40	1.40
NO. OF HELPERS	2.2	0	2.2										
ABLE TO CHOOSE ASSIGNMENT	2.8	2.5	0.3										
TRNG & TEACHER EXPER	3.7	3.5	0.2										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA. .	30-40 MILES
SIZE OF NEAREST SMSA . . .	1,173,000
PERCENT NONWHITE	3
PROJECT SIZE (PUPILS) . . .	397
NO. PUPILS/PAC MEMBER . . .	14.7
FT PER-PUPIL EXPENDITURE .	723

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

employed, and thus FT families were more likely to be impoverished by OEO standards. However, the actual employment rates and the proportion of families with male heads was quite high.

FT teachers and NFT teachers were reasonably comparable on most variables. Only on book resources and number of helpers did notable differences occur, showing FT higher on each.

Analysis of outcomes failed to reveal significant FT/NFT differences for any measure, pupil, parent, or teacher. Since classroom observation data were not collected for this sample, description of process components and differences are unavailable.

Summary

Since data from only a single project sample were available for interim evaluation of sponsor effects, risk of faulty interpretations is considered very high. It does appear that there is no clear evidence of a two-year program impact on this EF sample. However, review of the salient features of the model suggests that these results could be expected. These features are:

Focus and Objectives--long range program objectives

Child

Cognitive
Develop academic competence in many different areas

Affective
Promote feelings of self-confidence and motivation to learn

Curricular Approach
Teacher's role that of facilitator
Reinforcement from teacher and activities
Small group focus with provision for individual activity
Balances highly structured and relatively unstructured activities
Emphasizes sequential arrangement of tasks in small steps

Type of Parent Involvement
Minimal during period covered by report.

The model does not stress immediate academic impacts or extensive parent involvement as do many of the alternate approaches. The model places the teacher in a guidance role and appears to incorporate a Montessori-like concept of the child's learning from structured experiences. In this perspective, it is altogether possible that large differences on pupil measures would not emerge early in the child's FT experiences. Rather, effects of this model should occur on such noncognitive factors as motivation, curiosity, exploratory behavior, and the like. Unfortunately, adequate measures of these traits do not currently exist for use in large-scale evaluations. Further, this model was not implemented in this project until 1969-70, and hence by the eligibility definition of project inclusion (see p. 24) should not have been included in the evaluation sample in the first place. Thus, we must conclude that the evidence necessary to evaluate the University of Georgia model on its own terms is not available in these interim data.

UNIVERSITY OF OREGON ENGELMANN/BECKER MODEL FOR DIRECT INSTRUCTION
University of Oregon

Sponsor's Intended Approach

The sponsors of this model insist that a child who fails is a child who has not been properly taught and that the remedy lies in teaching the skills that have not been mastered. The model attempts to bring disadvantaged children up to the "normal" level of achievement of their middle-class peers by building on whatever skills children bring to school and to do so at an accelerated pace.

Using programmed reading, arithmetic, language, art, and music materials and behavior modification principles, the model employs strategies to teach concepts and skills required to master subsequent tasks oriented toward a growing level of competence. Emphasis is placed on learning the general case, i.e., developing intelligent behavior, rather than on rote behavior. Desired behaviors are systematically reinforced by praise and pleasurable activities, and unproductive or antisocial behavior is ignored.

In the classroom there are three adults for every 25 to 30 children: a regular teacher and two full-time aides recruited from the Follow Through parent community. Working very closely with a group of 5 or 6 pupils at a time, each teacher and aide employs the programmed materials in combination with frequent and persistent reinforcing responses, applying remedial measures where necessary and proceeding only when the success of each child with a given instructional unit is demonstrated. At the same time, the teacher aides are working with other small groups throughout the classroom in a similar manner. Training in implementing the model includes local summer workshops for all teachers and teacher aides and inservice training during the school year.

Family workers, who are usually parents themselves, personally contact all project parents to acquaint them with the program and teaching materials; inform them about their children's progress; and encourage them to attend Policy Advisory Committee meetings, visit school, and participate in training leading to work in the school. Parent workers also instruct parents in the use of materials to supplement the school program in the home and attempt to organize parents experiencing special difficulties into problem solving groups. On occasion, they contact local social service agencies where special assistance is needed by individual families.

Evaluation is an ongoing part of the program. Tests are administered at the beginning and throughout the year to determine if children are being taught the skills required by the model and at what rate. The tests are administered by parents especially trained for the job. Continous test data provide a positive gauge of teacher performance and allow for timely remedial action when the program appears to be implemented improperly or students appear to be falling behind. Video tapes of teachers and aides executing training tasks are used both to determine and to correct specific difficulties. Bi-monthly reports are issued to teachers reporting the progress of individual children and classroom summaries.

The parent Policy Action Committee participates actively in the model, focusing attention on the needs and interests of parents, recruiting parent aides, and assisting in writing the Follow Through proposal. The model is firmly committed to support a parent-community-school partnership in the operation of its program. The sponsor feels project parents must have the right to judge the effects of the program for themselves, both to provide criteria of program success and to guide efforts at program improvement.

Individual Project Results

Eight samples from five different projects sponsored by the University of Oregon (UO) were included in the analysis of interim effects. The distribution of these evaluation samples in terms of cohort, outcome and project is as follows:

Cohort	1st-year Effects	2nd-year Effects
IK		(projects a, b, and c)
IEF	(project d)	(projects d and e)
IIK	(project a)	
IIEF	(project d)	

Project UO(c)

Project UO(c) is located within a racially mixed but predominantly white community within a small east north central urban area. The project is moderate in size (480 pupils) with an anticipated per-pupil expenditure of $694 and an unusually high PAC participation rate of one member for roughly every four and one-half pupils.

The Cohort I-K, two year data gathered on this project sample (Table 43) show that FT and NFT classrooms were reasonably comparable at baseline, with the FT group showing a slight advantage. FT pupils tended to average higher on pretest measures; recalling that baseline testing occurred very late in Fall, 1969, this result may be due to initial program impacts in this project. The FT and NFT samples were essentially equivalent in terms of classroom composition and family characteristics. Specifically, most classroom samples were nearly evenly split between Black and non-Black pupils, and the few small differences between the groups on parent education, occupation, and employment are considered negligible.

Comparison of adjusted outcomes for these pupils shows that differences between FT and NFT pupils fail to reach significance on any of the evaluation variables. A trend toward positive pupil impacts is suggested by FT-favoring differences on the cognitive measures, but inspection of confidence intervals indicates that conclusions cannot be justified at this point. None of the differences on parent measures reach significance, although the parent/school involvement and expectations measures show differences in the desired direction.

The teacher data for this project show that FT and NFT teachers were reasonably comparable in their satisfaction with their job, the amount of book resources, race, and closeness to the community. FT teachers, on the other hand, appeared to have more training and more classroom helpers than NFT teachers, but reported less freedom to choose their assignment. Analysis of program effects on teachers, which controlled for these differences, failed to reveal any significant outcome on the evaluation variables.

Project UO(b)

The data for the Project UO(b) Cohort I-K, two-year sample are presented in Table 44. This project is relatively small (225 pupils), located within a school district in a large eastern urban population center. The anticipated per-pupil expenditure for this project was $902 and there was one PAC member for each 6.6 pupils, or roughly three PAC members per classroom.

The pupil baseline test, classroom composition, and family data for the three FT and four NFT classrooms indicate a fairly serious problem in noncomparability for this project sample. Specifically, the NFT pupils systematically scored above the FT pupils on all baseline measures, and the FT classrooms were predominantly, if not completely, Black, whereas

NFT classrooms were almost totally non-Black. Furthermore, although the FT parents tended to be better educated, fewer were employed and fewer had male heads of household than the parents of children in NFT classrooms. We believe that the bias introduced by this type of mismatch of control and treatment group seriously impairs the interpretability of any subsequent results. That is, even though our statistical procedures are designed to adjust for differences in certain baseline properties, substantial population differences between the two subsamples increase the probability of differential regressions. Since this mismatch exists for both pupil and parent variables, we feel a more appropriate procedure is to avoid interpretation of results for this project.

The teacher characteristics for the FT and NFT samples show that the teachers were reasonably comparable on most of the variables except those measuring number of book resources and number of helpers available for classroom assistance. On the whole, the FT teachers appear to be less well suited to the task than the NFT teachers; they report less satisfaction and fewer resources, they are less close to the community, and they have slightly less training and experience. With adjustments for these differences, analysis of the teacher outcome variables reveals that FT teachers are significantly more approving of their method than are NFT teachers, a variable that assumes great importance to those who believe that the enthusiasm and sense of commitment maintained by the teacher will ultimately relate to the success of the program. This finding may also be taken as indirect evidence that the program is reasonably well implemented.

Project UO(a)

Project UO(a) comprises a Cohort I-K, second-year sample and a Cohort II-K, first-year sample. This project is moderately large and is located within an urban area within the east north central region. The project average was one PAC member for approximately 28 pupils and involved an anticipated per-pupil expenditure of just over $1000.

The evaluation data for the Cohort I-K sample are presented in Table 45. Values for the ten FT and six NFT classrooms on the control variables show FT pupils are systematically above NFT on the pretest measures and percentage with preschool experience. The FT classrooms have a better ethnic balance in this sample (NFT is nearly all Black), but the FT families appear to be more disadvantaged than the NFT families. Thus, overall, the two subgroups appear only moderately comparable in terms of these baseline measures.

TABLE 43

PROJECT DATA TABLE--UNIVERSITY OF OREGON PROJECT C, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	4	0	OVERALL ACHIEVEMENT	149.9	134.7	15.2	151.2	142.8	8.4	9.18	-9.6	26.4
AVERAGE PUPILS/CLASSROOM	27.8	8.0	19.8										
QUANT. PRESCORE	20.6	17.9	2.7	AFFECT	17.7	18.3	-0.6	17.6	19.0	-1.4	0.97	-3.3	.5
COG. PROCESS PRESCORE	5.5	5.3	0.2										
READING PRESCORE	34.2	31.4	2.8	ATTENDANCE	13.8	17.7	-3.9	13.0	15.2	-2.2	3.01	-8.1	3.7
LANGUAGE PRESCORE	9.8	9.5	0.3										
AFFECT PRESCORE	16.2	15.1	1.1	WRAT TOTAL	88.6	78.8	9.8	90.1	84.1	6.0	4.96	-3.7	15.7
AGE (JUNE '71)	85.0	85.9	-0.9										
% CLASSROOM MALE	52.3	30.5	21.8	QUANTITATIVE	45.4	43.1	2.3	45.5	45.9	-0.4	2.95	-6.2	5.4
% CLASSROOM BLACK	57.6	52.3	5.3										
% PRESCHOOL (OR NO. MOS.)	83.4	78.6	4.8	COGNITIVE PROCESSES	7.6	7.1	0.5	7.5	7.2	0.3	0.55	-.8	1.4
% PARENTS W/O HS DIPL.	57.3	74.8	17.5										
% PARENTS W SKILLED OCCUP.	31.9	29.0	2.9	READING SKILLS	65.0	56.2	8.8	66.1	60.5	5.6	4.56	-3.3	14.5
% PARENTS BLACK	56.1	36.3	19.8										
% PARENTS POVERTY ELIGIBLE	53.8	55.4	-1.6	LANGUAGE ARTS	32.0	28.5	3.5	32.0	29.2	2.8	2.53	-2.2	7.8
% HEAD HOUSEHOLD EMPLOYED	65.2	58.9	6.3										
% HEAD HOUSEHOLD MALE	59.9	59.9	0										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	4	4	0	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	24.8	10.3	14.5	INTERACT	-.032	-.070	.038	.053	.084	-.031	.302	-.595	.589
% W/O HIGH SCHOOL DIPLOMA	57.3	74.8	17.5										
% W SKILLED OCCUP.	31.9	29.0	2.9	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	89.4	60.1	29.3	INVOLVE	.188	-.287	.475	.074	-.082	.156	.410	-.65	.96
% BLACK	56.1	36.3	19.8										
% REPORTING USE OF PRESCHOOL	83.4	57.1	26.3	CHILD ACALEMIC									
% POVERTY ELIGIBLE	53.8	55.4	-1.6	EXPECT	.237	-.516	.753	-.097	-.520	.423	.424	-.41	1.25
% HEAD HOUSEHOLD EMPLOYED	65.2	58.9	6.3										
% HEAD HOUSEHOLD MALE	59.9	59.9	0	SENSE OF CONTROL	-.012	-.065	.053	-.089	.163	-.252	.401	-1.04	.53
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	4	2	2	PARENT-EDUCATOR									
JOB SATISF. RATING	2.1	2.0	0.1	IMAGE	0.27	0.36	-0.09	0.23	0.54	-0.31	0.221	-.74	.12
BOOK RESOURCE SCALE	3.5	4.0	-0.5										
RACE (BLACK/NONBLACK)	1.0	1.0	0	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	0.5	1.0	-0.5	OF METHOD	1.75	2.00	-0.25	1.83	1.98	-0.15	0.308	-.75	.45
NO. OF HELPERS	2.0	1.0	1.0										
ABLE TO CHOOSE ASSIGNMENT	2.0	3.0	-1.0										
TRNG & TEACHER EXPER	4.0	2.2	1.8										

* PROCESS DATA	
PROJECT DESCRIPTORS	
REGION	EAST NORTH CENTRAL
DISTANCE TO NEAREST SMSA	WITHIN
SIZE OF NEAREST SMSA	117,000
PERCENT NONWHITE	11
PROJECT SIZE (PUPILS)	480
NO. PUPILS/PAC MEMBER	4.4
FT PER-PUPIL EXPENDITURE	694

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 44

PROJECT DATA TABLE--UNIVERSITY OF OREGON PROJECT B, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						
												CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	3	4	-1	OVERALL ACHIEVEMENT	127.5	146.6	-19.1	126.0	131.4	-5.4	11.30	-27.5	16.7	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	13.0	5.5	7.5											
QUANT. PRESCORE	20.8	23.0	-2.2	AFFECT	17.2	17.8	-0.6	16.7	17.8	-1.1	1.19	-3.4	1.2	REGION . . . . MIDDLE ATLANTIC
COG. PROCESS PRESCORE	4.0	4.8	-0.8											
READING PRESCORE	36.9	41.0	-4.1	ATTENDANCE	12.9	13.0	-0.1	13.9	10.8	3.1	3.70	-4.2	10.4	DISTANCE TO NEAREST SMSA . . WITHIN
LANGUAGE PRESCORE	8.3	9.2	-0.9											
AFFECT PRESCORE	15.2	15.9	-0.7	WRAT TOTAL	77.8	84.5	-6.7	76.4	77.5	-1.1	6.11	-13.1	10.9	SIZE OF NEAREST SMSA . . . 16,207,000
AGE (JUNE '71)	83.8	83.8	0											
% CLASSROOM MALE	44.3	31.5	12.8	QUANTITATIVE	41.0	43.7	-2.7	41.5	39.0	2.5	3.63	-4.6	9.6	PERCENT NONWHITE 25
% CLASSROOM BLACK	96.6	11.2	85.4											
% PRESCHOOL (OR NO. MOS.)	76.7	69.9	6.8	COGNITIVE PROCESSES	6.3	7.5	-1.2	6.2	7.0	-0.8	0.68	-2.1	.5	PROJECT SIZE (PUPILS) . . . 225
% PARENTS W/O HS DIPL.	50.2	68.7	-18.5											
% PARENTS W SKILLED OCCUP.	47.4	45.0	2.4	READING SKILLS	54.7	64.8	-10.1	53.4	57.1	-3.7	5.60	-14.7	7.3	NO. PUPILS/PAC MEMBER . . . 6.6
% PARENTS BLACK	96.7	13.2	83.5											
% PARENTS POVERTY ELIGIBLE	47.7	57.1	-9.4	LANGUAGE ARTS	25.5	30.5	-5.0	24.9	28.3	-3.4	3.11	-9.5	2.7	FT PER-PUPIL EXPENDITURE . . 902
% HEAD HOUSEHOLD EMPLOYED	71.7	86.7	-15.0											
% HEAD HOUSEHOLD MALE	66.7	90.0	-23.3											
				PART II PARENT EVALUATION DATA										CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT
NO. CLASSROOM GROUPS	3	4	-1	PARENT-CHILD INTERACT	.395	-.298	.693	.297	-.206	.503	.356	-.19	1.20	
AV. PARENTS/CLASSRM GRP	13.0	5.5	7.5											
% W/O HIGH SCHOOL DIPLOMA	50.2	68.7	-18.5											
% W SKILLED OCCUP.	47.4	45.0	2.4	PARENT-SCHOOL INVOLVE	.397	-.364	.761	.112	-.192	.304	.482	-.64	1.25	
% POS EVAL OF CHILD LRNG	91.4	65.0	26.4											
% BLACK	96.7	13.2	83.5											
% REPORTING USE OF PRESCHOOL	76.7	69.9	6.8	CHILD ACADEMIC EXPECT	.004	.314	-.310	.024	.049	-.025	.499	-1.00	.95	
% POVERTY ELIGIBLE	47.7	57.1	-9.4											
% HEAD HOUSEHOLD EMPLOYED	71.7	86.7	-15.0											
% HEAD HOUSEHOLD MALE	66.7	90.0	-23.3	SENSE OF CONTROL	.326	-.146	.472	.112	.134	-.022	.473	-.95	.90	
				PART III TEACHER EVALUATION DATA										
NO. OF CLASSROOMS	3	3	0	PARENT-EDUCATOR IMAGE	0.57	0.38	0.19	0.50	0.53	-0.03	0.223	-.47	.41	
JOB SATISF. RATING	1.5	2.0	-0.5											
BOOK RESOURCE SCALE	3.0	4.0	-1.0											
RACE (BLACK/NONBLACK)	0.7	1.0	-0.3	PROFESSION. ACCEPT OF METHOD	2.00	1.33	0.67	[illegible].17	1.16	1.01	0.311	.40	1.62	
IDENT. W. COMMUNITY	0.7	1.4	-0.7											
NO. OF HELPERS	2.0	0	2.0											
ABLE TO CHOOSE ASSIGNMENT	2.3	1.6	0.7											
TRNG & TEACHER EXPER	5.3	6.0	-0.7											

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 45

PROJECT DATA TABLE--UNIVERSITY OF OREGON PROJECT A, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	10	6	4	OVERALL ACHIEVEMENT	135.8	129.5	6.3	130.0	124.9	5.1	7.06	-8.7	18.9
AVERAGE PUPILS/CLASSROOM	13.1	8.0	5.1										
QUANT. PRESCORE	23.4	21.0	2.4	AFFECT	17.7	16.6	1.1	17.9	16.8	1.1	0.74	-.4	2.6
COG. PROCESS PRESCORE	6.3	5.5	0.8										
READING PRESCORE	38.7	35.0	3.7	ATTENDANCE	5.4	13.0	-7.6	4.1	14.6	-10.5	2.31	-15.0	-6.0
LANGUAGE PRESCORE	10.7	9.4	1.3										
AFFECT PRESCORE	16.0	15.3	0.7	WRAT TOTAL	80.7	74.7	6.0	77.9	72.0	5.9	3.81	-1.6	13.4
AGE (JUNE '71)	84.9	84.2	0.7										
% CLASSROOM MALE	46.9	56.3	-9.4	QUANTITATIVE	42.6	41.6	1.0	40.4	40.6	-0.2	2.27	-4.6	4.2
% CLASSROOM BLACK	67.8	90.3	-22.5										
% PRESCHOOL (OR NO. MOS.)	88.4	56.2	32.2	COGNITIVE PROCESSES	6.5	6.9	-0.4	6.3	6.8	-0.5	0.42	-1.3	.3
% PARENTS W/O HS DIPL.	78.1	60.7	17.4										
% PARENTS W SKILLED OCCUP.	17.2	22.0	-4.8	READING SKILLS	59.3	54.9	4.4	57.2	52.4	4.8	3.50	-2.1	11.7
% PARENTS BLACK	65.8	90.0	-24.2										
% PARENTS POVERTY ELIGIBLE	84.9	60.5	24.4	LANGUAGE ARTS	27.4	26.1	1.3	26.1	25.1	1.0	1.94	-2.8	4.8
% HEAD HOUSEHOLD EMPLOYED	51.0	78.2	-27.2										
% HEAD HOUSEHOLD MALE	41.0	65.5	-24.5										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	10	5	5	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	7.7	6.4	1.3	INTERACT	-.190	.249	-.439	.042	.234	-.192	.254	-.69	.31
% W/O HIGH SCHOOL DIPLOMA	78.1	60.7	17.4										
% W SKILLED OCCUP.	17.2	22.0	-4.8	PARENT-SCHOOL									
% POS EVAL OF CHILD LANG	91.5	39.6	51.9	INVOLVE	-.076	-.485	.409	-.152	-.455	.303	.345	-.37	.98
% BLACK	65.8	90.0	-24.2										
% REPORTING USE OF PRESCHOOL	88.5	56.8	31.7	CHILD ACADEMIC									
% POVERTY ELIGIBLE	84.9	60.5	24.4	EXPECT	.193	-.293	.486	-.130	.430	-.560	.357	-1.26	.14
% HEAD HOUSEHOLD EMPLOYED	51.0	78.2	-27.2										
% HEAD HOUSEHOLD MALE	41.0	65.5	-24.5	SENSE OF CONTROL	.100	-.234	.334	-.007	-.167	.160	.338	-.50	.82
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	2	4	-2	PARENT-EDUCATOR									
JOB SATISF. RATING	2.2	1.7	0.5	IMAGE	0.50	0.61	-0.11	0.27	0.60	-0.33	0.335	-.97	.31
BOOK RESOURCE SCALE	1.5	3.0	-1.5										
RACE (BLACK/NONBLACK)	0.5	0.7	-0.2	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	0	0.7	-0.7	OF METHOD	2.00	1.00	1.00	1.91	1.03	0.88	0.314	.26	1.50
NO. OF HELPERS	2.0	1.0	1.0										
ABLE TO CHOOSE ASSIGNMENT	0.7	0.2	0.5										
TRNG & TEACHER EXPER	4.2	5.2	-1.0										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	EAST NORTH CENTRAL
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	353,000
PERCENT NONWHITE	12
PROJECT SIZE (PUPILS) . . .	750
NO. PUPILS/PAC MEMBER . . .	28.6
FT PER-PUPIL EXPENDITURE . .	1,003

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

Outcome differences adjusted for these baseline biases show significance only for the attendance measure. FT pupils have lower absence rates than NFT pupils. In addition, FT pupils scored higher on four of the six cognitive outcome variables. However, none of these differences reach significance and thus, we must interpret the outcomes as showing no substantial project effect on the pupils.

Parent outcome measures indicate a similar lack of effect. In no instance do the adjusted FT/NFT differences reach significance.

Comparison of averages on the teacher variables show that the FT teachers reported a higher degree of job satisfaction but had fewer book resources than the NFT teachers. Furthermore, the FT teachers had more classroom help and more freedom to choose their assignments but were somewhat less experienced than the NFT teachers. The outcome measures for teachers show that FT teachers are significantly more accepting of their teaching methods than are NFT teachers. We should again note that this difference is important to the extent that the teacher's approval of the teaching method influences the success of the program.

The evaluation data for the Cohort II, one-year sample in this project are summarized in Table 46. Some very serious problems regarding the comparability of the FT and NFT samples within this cohort project are apparent from this table. For example, the FT classes systematically averaged above the NFT classes. Furthermore, the data on classroom composition are highly suspicious, particularly for the preschool experience of NFT pupils, which does not correspond to that reported by the parents. Finally, NFT values on many of the parent background and poverty variables were imputed* for this sample. This imputation most likely seriously underestimated the comparison group values, which would result in underadjustment or even adjustment in the wrong direction for FT/NFT differences. Because of this fairly strong evidence of data problems and the comparison group's severe lack of comparability with the FT group, we feel that interpretation of these parent and pupil outcome data would lead to unwarranted conclusions. Any analysis and corresponding interpretation must be based on a more complete and verified data set.

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*A discussion of imputation (i.e., estimation) problems can be found in Annex A. Detailed rules for imputing scores for each variable in cases where data were missing are too extensive to be incorporated in this report, but they are part of the formal documentation for the analysis.

TABLE 46

PROJECT DATA TABLE--UNIVERSITY OF OREGON PROJECT A, COHORT II, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1970-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	2	2	OVERALL ACHIEVEMENT	124.6	97.0	27.6	123.8	96.4	27.4	17.42	-6.7	61.5
AVERAGE PUPILS/CLASSROOM	10.5	1.0	9.5										
QUANT. PRESCORE	20.3	18.1	2.2	AFFECT	17.1	16.0	1.1	17.8	15.9	1.9	2.53	-3.1	6.9
COG. PROCESS PRESCORE	6.9	5.1	1.8										
READING PRESCORE	28.2	12.7	15.5	ATTENDANCE	12.2	13.6	-1.4	10.9	18.4	-7.5	8.29	-23.7	8.7
LANGUAGE PRESCORE	15.4	11.8	3.6										
AFFECT PRESCORE	13.6	15.2	-1.6	WRAT	61.3	42.0	19.3	63.0	39.9	23.1	12.14	-.69	46.9
AGE (JUNE '71)	72.3	75.2	-2.9										
% CLASSROOM MALE	55.0	20.8	34.2	QUANTITATIVE	34.1	28.0	6.1	33.5	25.7	7.8	5.06	-2.1	17.7
% CLASSROOM BLACK	79.1	100.0	-20.9										
% PRESCHOOL (OR NO. MOS.)	8.9	0	8.9	COGNITIVE PROCESSES	9.3	9.0	0.3	8.8	8.7	0.1	1.11	-1.2	2.3
% PARENTS W/O HS DIPL.	63.1	62.5	0.6										
% PARENTS W SKILLED OCCUP.	25.1	28.5	-3.4	READING SKILLS	60.3	45.0	15.3	61.6	44.9	16.7	11.29	-5.4	38.8
% PARENTS BLACK	76.7	100.0	-23.3										
% PARENTS POVERTY ELIGIBLE	49.2	37.5	11.7	LANGUAGE ARTS	20.9	15.0	5.9	20.3	16.7	3.6	2.58	-1.5	8.7
% HEAD HOUSEHOLD EMPLOYED	62.3	37.5	24.8										
% HEAD HOUSEHOLD MALE	52.1	37.5	14.6										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	3	2	1										
AV. PARENTS/CLASSRM GRP	9.0	4.5	4.5	PARENT-CHILD INTERACT	.364	-.137	.501	.062	-.974	1.036	.444	.17	1.91
% W/O HIGH SCHOOL DIPLOMA	63.1	62.5	0.6										
% W SKILLED OCCUP.	25.1	28.5	-3.4										
% POS EVAL OF CHILD LRNG	97.4	87.5	9.9	PARENT-SCHOOL INVOLVE	.337	-.090	.427	.463	-.132	.595	.559	-.50	1.69
% BLACK	76.7	100.0	-23.3										
% REPORTING USE OF PRESCHOOL	100.0	65.8	34.2										
% POVERTY ELIGIBLE	49.2	37.5	11.7	CHILD ACADEMIC EXPECT	.558	-.076	.634	.212	-.141	.353	.420	-.47	1.18
% HEAD HOUSEHOLD EMPLOYED	62.3	37.5	24.8										
% HEAD HOUSEHOLD MALE	52.1	37.5	14.6	SENSE OF CONTROL	-.051	.467	-.518	-.270	.260	-.530	.595	-1.70	.64
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	3	2	1										
JOB SATISF. RATING	2.2	1.6	0.6	PARENT-EDUCATOR IMAGE	0.48	0.29	0.19	0.49	0.32	0.17	0.378	-.57	.91
BOOK RESOURCES	2.7	2.0	0.7										
RACE (BLACK/NONBLACK)	1.0	1.0	0										
IDENT. W. COMMUNITY	1.0	0.5	0.5	PROFESSION. ACCEPT OF METHOD	2.00	1.00	1.00	2.21	0.80	1.41	1.20	-.94	3.76
NO. OF HELPERS	2.0	0	2.0										
ABLE TO CHOOSE ASSIGNMENT	2.7	1.0	1.7										
TRNG & TEACHER EXPER	7.0	6.0	1.0										

PROCESS DATA	
PROJECT DESCRIPTORS	
REGION	EAST NORTH CENTRAL
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	353,000
PERCENT NONWHITE	12
PROJECT SIZE (PUPILS) . . .	750
NO. PUPILS/PAC MEMBER . . .	28.6
FT PER-PUPIL EXPENDITURE . .	1,003

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

The teacher data obtained for this project do appear to be accurate. The specific values on the teacher variables indicate that the FT teachers were somewhat more satisfied with their job conditions, had more book resources, were somewhat more closely tied to the communities in which they taught, had more helpers, had had more freedom to choose their assignments, and were slightly better qualified than the NFT teachers. Analysis of outcomes indicates that neither of the outcome measures show significant FT/NFT differences.

Project UO(e)

The data for Project UO(e) are summarized in Table 47. This moderate sized project is located more than 75 miles from the nearest SMSA in the west south central region of the United States, had a low PAC membership of one PAC for each 42 pupils, and anticipated a near average FT expenditure of $757 per pupil.

The pupil baseline variables show that the seven FT classrooms and the two NFT classrooms were far from comparable on prescores. FT pupils averaged below NFT pupils on nearly all measures and were 15 points below on the reading scores. However, the two samples do appear reasonably well matched on classroom composition variables.

Parent variables were not available for control as covariables; their absence severely limited the interpretability of the outcomes of our analysis. As we have repeatedly noted, FT families tend to be more severely disadvantaged than comparison group families. Since indices of disadvantagement relate strongly to outcomes, they are essential for appropriate adjustment and interpretation of the FT/NFT differences.

We do not attempt to interpret the results of an inappropriate analysis of pupil outcome data. We choose instead to limit our discussion to classroom observation data. All of the factors appear to be quite salient for describing classroom processes in this project. The factor score averages reveal a pattern consistent with the model. In particular, the high score on the programmed academic factor would be expected. It appears that the FT and NFT classes differ considerably and that the model has been implemented in this project.

Project UO(d)

Project UO(d) is located fairly far from the nearest SMSA in the east south central region. It is a moderately large project in a racially mixed but predominantly white community. Since the public schools

TABLE 47

PROJECT DATA TABLE—UNIVERSITY OF OREGON PROJECT 6, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS,
1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	7	3	3	OVERALL ACHIEVEMENT	152.6	174.0	-21.4	164.3	171.3	-7.0	12.30	-33.1	19.1
AVERAGE PUPILS/CLASSROOM	12.1	9.3	2.8										
QUANT. PRESCORE	20.6	22.9	-2.3	AFFECT	17.3	18.1	-0.8	14.6	16.8	-2.2	0.80	-3.9	-.5
COG. PRETEST PRESCORE	6.2	6.1	0.1										
READING PRESCORE	30.7	44.7	-14.0	ATTENDANCE	8.8	10.2	-1.4	16.2	13.4	2.8	4.05	-5.8	11.4
LANGUAGE PRESCORE	11.2	13.0	-1.8										
AFFECT PRESCORE	14.7	17.6	-2.9	WRAT TOTAL	108.5	115.7	-7.2	113.9	116.8	-2.9	5.28	-14.1	8.3
AGE (JUNE '71)	102.4	98.8	3.6										
% CLASSROOM MALE	42.3	57.1	-14.8	QUANTITATIVE	38.1	45.9	-7.8	41.2	42.4	-1.2	3.00	-7.6	5.2
% CLASSROOM BLACK	0	8.3	-8.3										
% PRESCHOOL (OR NO. RES.)	83.2	101.0	-17.8	READING SKILLS	91.3	[illegible]	-6.6	98.7	100.3	-1.6	8.60	-19.9	16.7
% PARENTS W/O HS DIPL.	88.0	88.0	0										
% PARENTS W SKILLED OCCUP.	24.7	24.7	0	LANGUAGE ARTS	33.3	[illegible]	-7.0	34.6	38.0	-3.4	2.45	-8.5	1.6
% PARENTS BLACK	48.2	48.2	0										
% PARENTS POVERTY ELIGIBLE	58.6	58.6	0										
% HEAD HOUSEHOLD EMPLOYED	82.6	82.6	0										
% HEAD HOUSEHOLD MALE	81.8	81.8	0										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	WEST SOUTH CENTRAL
DISTANCE TO NEAREST SMSA . .	75-120 MILES
SIZE OF NEAREST SMSA	844,000
PERCENT MINORITY	LESS THAN 1
PROJECT SIZE (PUPILS) . . .	886
NO. PUPILS PAC MEMBER . . .	42
ST/FED-PUPIL EXPENDITURE . .	717

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	-.33	-1.03
CHILD-INITIATED INTERACTIONS	1.44	1.35
PROGRAMMED ACADEMIC	2.40	.30
EXPRESSIVE	-1.20	-.85
CHILD SELF-LEARNING	-1.20	-.14

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aSee "Guide for Interpretation of Results" for explanation of table entries.

do not offer kindergarten, the groups in this project are classified as entering first grade cohort samples. The project had an average of 18.2 pupils per PAC member and an anticipated per-pupil expenditure of $735.

Three sets of data were analyzed for this project--a Cohort I, two-year effects sample, a one-year effects subset for this same sample, and a Cohort II, one-year effects sample. The data for the two-year effects sample are presented in Table 48, and the data for the first-year subset of this sample, in Table 49. Finally, the data for the Cohort II, first-year sample are presented in Table 50.

The baseline data for each of these samples indicate a serious mismatch of the FT and NFT pupil samples. FT pupils were below the NFT comparison pupils on entering abilities. Most of the FT were Black and came from very impoverished Black families; whereas most of the NFT pupils were non-Black, and very few came from families that met the poverty criteria. Because the samples are very different, we believe that the probability of inappropriate covariable adjusting is extreme. In fact, the two samples can be characterized as belonging to two different populations on all covariables of interest. Consequently, we believe that any interpretation of the results of pupil and parent outcome analyses for this project would be invalid at this time. We present the project data for descriptive purposes only.

Teacher and classroom observation data were also obtained for these two samples (the Cohort I, two-year and the Cohort II, one-year samples). They point up additional differences between the two groups. The Follow Through teachers apparently have fewer book resources and less freedom to choose their assignments than the NFT teachers; on the other hand, more classroom helpers are used in FT classrooms than in NFT classrooms. Measures of teacher attitudes toward parents and toward their teaching methods show that FT teachers for the Cohort I sample are significantly more accepting of their methods than are the NFT teachers. This result did not recur in the Cohort II sample.

The factors scores associated with the respective classrooms for these two samples reveal an interesting and repeated pattern. As would be expected from the sponsor's model, the FT classrooms are strongly characterized by a high programmed academic factor. The NFT classrooms, on the other hand, can be characterized by very low frequency of self-regulatory and child self-learning activities. The sponsor appears to have affected classroom processes; they are quite different from the processes occurring in NFT classrooms.

TABLE [illegible]

PROJECT DATA TABLE--UNIVERSITY OF OREGON PROJECT D, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	3	2	OVERALL ACHIEVEMENT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AVERAGE PUPILS/CLASSROOM	[illegible]	[illegible]	[illegible]										
QUANT. PREDICTOR	[illegible]	[illegible]	[illegible]	AFFECT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
COG. PROCESS PREDICTOR	[illegible]	[illegible]	[illegible]										
READING PREDICTOR	[illegible]	[illegible]	[illegible]	ATTENDANCE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LANGUAGE PREDICTOR	[illegible]	[illegible]	[illegible]										
AFFECT PREDICTOR	[illegible]	[illegible]	[illegible]	WRAT TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AGE (JUNE '71)	[illegible]	[illegible]	[illegible]										
% CLASSROOM MALE	[illegible]	[illegible]	[illegible]	QUANTITATIVE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% CLASSROOM BLACK	[illegible]	0	[illegible]										
% PRESCHOOL (OR NO. MOS.)	64.6	16.8	47.8	READING SKILLS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% PARENTS W/O HS DIPL.	73.1	50.6	22.5										
% PARENTS W SKILLED OCCUP.	23.6	56.2	-32.6	LANGUAGE ARTS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% PARENTS BLACK	86.7	0	86.7										
% PARENTS POVERTY ELIGIBLE	79.5	21.7	57.8										
% HEAD HOUSEHOLD EMPLOYED	80.4	100.0	-19.6										
% HEAD HOUSEHOLD MALE	63.4	95.9	-32.5										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	[illegible]	[illegible]	[illegible]	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	13.4	12.7	0.7	INTERACT	.086	.141	-.055	-.052	-.014	-.038	.450	-1.26	.50
% W/O HIGH SCHOOL DIPLOMA	73.1	50.6	22.5										
% W SKILLED OCCUP.	23.6	56.2	-32.6	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	92.3	70.3	22.0	INVOLVE	.127	.051	.076	.055	.367	-.312	.458	-1.21	.59
% BLACK	86.7	0	86.7										
% REPORTING USE OF PRESCHOOL	64.6	16.8	47.8	CHILD ACADEMIC									
% POVERTY ELIGIBLE	79.5	21.7	57.8	EXPECT	.544	.153	.391	-.017	.332	-.349	.452	-1.23	.54
% HEAD HOUSEHOLD EMPLOYED	80.4	100.0	-19.6										
% HEAD HOUSEHOLD MALE	63.4	95.9	-32.5	SENSE OF CONTROL	.284	.267	.017	.151	.253	-.102	.441	-.97	.76
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	4	3	1	PARENT-EDUCATOR									
JOB SATISF. RATING	1.8	1.8	0	IMAGE	0.71	0.29	0.42	0.59	0.52	0.07	0.331	-.58	.72
BOOK RESOURCE SCALE	2.7	5.0	-2.3										
RACE (BLACK/NONBLACK)	0	1.0	-1.0	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	2.0	1.3	0.7	OF METHOD	2.00	1.33	0.67	2.50	0.85	1.65	0.497	.68	2.62
NO. OF HELPERS	2.0	0	2.0										
ABLE TO CHOOSE ASSIGNMENT	1.0	2.7	-1.7										
TRNG & TEACHER EXPER	7.5	6.0	1.5										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	EAST SOUTH CENTRAL
DISTANCE TO NEAREST SMSA . .	[illegible]
SIZE OF NEAREST SMSA	[illegible]
PROJECT MATURITY	[illegible]
PROJECT SIZE (PUPILS) . . .	[illegible]
NO. PUPILS PAC MEMBER . . .	[illegible]
FT PER-PUPIL EXPENDITURE . .	[illegible]

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	-.56	-1.15
CHILD-INITIATED INTERACTIONS	-.79	-.53
PROGRAMMED ACADEMIC	1.40	.26
EXPRESSIVE	-.74	-1.02
CHILD SELF-LEARNING	-.05	1.33

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 49

PROJECT DATA TABLE--UNIVERSITY OF OREGON PROJECT D, COHORT I, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFICENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	3	2	OVERALL ACHIEVEMENT	127.5	145.7	-18.2	145.0	134.4	10.6	4.95	.9	20.3
QUANT. PRESCORE	24.6	32.0	-7.4										
COG. PROCESS PRESCORE	5.7	7.2	-1.5	AFFECT	15.9	18.6	-2.7	18.8	19.1	-.3	1.57	-3.4	2.8
READING PRESCORE	40.0	67.0	-27.0										
LANGUAGE PRESCORE	10.8	13.7	-2.9	ATTENDANCE	8.4	9.4	-1.0	2.5	11.8	-9.3	4.28	-17.7	-.9
AFFECT PRESCORE	16.1	17.2	-1.1										
AGE (JUNE '71)	96.4	95.6	.8	WRAT TOTAL	58.1	68.3	-10.2	66.6	62.5	4.1	3.58	-2.9	11.1
% CLASSROOM MALE	61.6	61.5	.1										
% CLASSROOM BLACK	87.8	0	87.8	QUANTITATIVE	35.4	39.6	-4.2	39.7	37.3	2.4	1.51	-.6	5.4
% PRESCHOOL (OR NO. MOS.)	64.6	16.8	47.8										
% PARENTS W/O HS DIPL.	73.1	50.6	22.5	COGNITIVE PROCESSES	9.8	9.5	.3	10.3	9.2	1.1	.57	-1.9	2.2
% PARENTS W/SKILLED OCCUP.	23.6	56.2	-32.6										
% PARENTS BLACK	86.7	0	86.7	READING SKILLS	64.6	77.2	-12.6	75.5	70.2	5.3	3.92	-2.4	13.0
% PARENTS POVERTY ELIGIBLE	79.5	21.7	57.8										
% HEAD HOUSEHOLD EMPLOYED	80.4	100	-19.6	LANGUAGE ARTS	17.7	19.5	-1.8	19.6	17.7	1.9	1.04	-.1	3.9
% HEAD HOUSEHOLD MALE	63.3	95.8	-32.5										

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 50

PROJECT DATA TABLE—UNIVERSITY OF OREGON PROJECT D, COHORT II, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1970-1971

BASELINE CONTROL DATA

VARIABLE	FT	NFT	DIFF
NO. OF CLASSROOMS	4	3	1
AVERAGE PUPILS/CLASSROOM	10.3	9.0	1.3
QUANT. PRESCORE	27.5	27.2	0.3
COG. PROCESS PRESCORE	5.9	7.2	-1.3
READING PRESCORE	31.2	38.0	-6.8
LANGUAGE PRESCORE	13.2	16.1	-2.9
AFFECT PRESCORE	16.0	15.1	0.9
AGE (JUNE '71)	84.8	86.4	-1.6
% CLASSROOM MALE	55.6	29.1	26.5
% CLASSROOM BLACK	84.1	0	84.1
% PRESCHOOL (OR NO. MOS.)	5.8	0	5.8
% PARENTS W/O HS DIPL.	86.4	42.4	44.0
% PARENTS W SKILLED OCCUP.	15.1	59.5	-44.4
% PARENTS BLACK	87.7	0	87.7
% PARENTS POVERTY ELIGIBLE	70.8	21.2	49.6
% HEAD HOUSEHOLD EMPLOYED	84.5	74.6	9.9
% HEAD HOUSEHOLD MALE	57.3	79.0	-21.7
NO. CLASSROOM GROUPS	4	3	1
AV. PARENTS/CLASSRM GRP	16.8	8.7	8.1
% W/O HIGH SCHOOL DIPLOMA	86.4	42.4	44.0
% W SKILLED OCCUP.	15.1	59.5	-44.4
% POS EVAL OF CHILD LRNG	91.4	32.6	58.8
% BLACK	87.7	0	87.7
% REPORTING USE OF PRESCHOOL	72.5	0	72.5
% POVERTY ELIGIBLE	70.8	21.2	49.6
% HEAD HOUSEHOLD EMPLOYED	84.5	74.6	9.9
% HEAD HOUSEHOLD MALE	57.3	79.0	-21.7
NO. OF CLASSROOMS	3	3	0
JOB SATISF. RATING	1.8	2.2	-0.4
MODE RESOURCE SCALE	2.3	3.3	-1.0
RACE (BLACK/NONBLACK)	0.3	1.0	-0.7
IDENT. W. COMMUNITY	1.0	1.7	-0.7
NO. OF HELPERS	2.0	0	2.0
ABLE TO CHOOSE ASSIGNMENT	0.3	3.0	-2.7
TRNG & TEACHER EXPER	5.6	4.7	0.9

	OUTCOME DATA			ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
PART I CHILD EVALUATION DATA									
OVERALL ACHIEVEMENT	111.6	122.0	-10.4	154.7	102.4	52.3	28.86	-4.3	108.9
AFFECT	15.5	16.7	-1.2	18.3	16.4	1.9	1.72	-1.5	5.3
ATTENDANCE	8.4	4.4	4.0	5.4	5.8	-0.4	10.34	-20.7	19.9
WRAT TOTAL	65.0	70.3	-5.3	87.1	44.2	42.9	18.11	7.4	78.4
QUANTITATIVE	40.2	40.4	-0.2	55.6	33.5	22.1	12.29	-2.0	46.2
COGNITIVE PROCESSES	8.6	9.9	-1.3	10.3	9.8	0.5	4.57	-8.5	9.5
READING SKILLS	62.8	71.7	-8.9	88.8	59.2	29.6	16.06	-1.9	61.1
LANGUAGE ARTS	19.0	21.0	-2.0	28.5	16.8	11.7	6.35	-0.7	24.1
PART II PARENT EVALUATION DATA									
PARENT-CHILD INTERACT	-.252	-.031	-.221	-.279	-.083	-.196	.934	-2.03	1.63
PARENT-SCHOOL INVOLVE	-.263	-.492	.229	-.312	-.589	.277	1.477	-2.62	3.17
CHILD ACADEMIC EXPECT	.301	-.472	.773	-.170	-.070	-.100	1.017	-2.09	1.89
SENSE OF CONTROL	.160	-.110	.270	.634	-.933	1.57	1.068	-.52	3.66
PART III TEACHER EVALUATION DATA									
PARENT-EDUCATOR IMAGE	0.42	0.29	0.13	0.09	0.55	-0.46	0.503	-1.45	.53
PROFESSION. ACCEPT OF METHOD	1.67	2.00	-0.33	1.61	1.64	-0.03	0.546	-1.10	1.04

PROCESS DATA

PROJECT DESCRIPTORS

REGION	EAST SOUTH CENTRAL
DISTANCE TO NEAREST SMSA .	75-120 miles
SIZE OF NEAREST SMSA . . .	558,000
PERCENT NONWHITE	18
PROJECT SIZE (PUPILS) . .	460
NO. PUPILS/PAC MEMBER . .	18.2
FT PER-PUPIL EXPENDITURE .	735

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	-.22	-1.06
CHILD-INITIATED INTERACTIONS	-.59	-.94
PROGRAMMED ACADEMIC . . .	1.74	.08
EXPRESSIVE	-.57	-.97
CHILD SELF-LEARNING	-.[illegible]	1.30

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*See "Guide for Interpretation of Results" for explanation of table entries.

Summary

The salient features of the University of Oregon model are summarized below:

Focus and Objectives--emphasizes short range program objectives

- Child
  - Cognitive (major emphasis)
    - Develop competence in reading, math, language, art, and music

Curricular Approach

- Teacher's role is that of director
- Desired behaviors are systematically reinforced by praise and pleasurable activities
- Teacher and two aides each work closely with small groups
- Highly programmed materials and structured environment
- Structured responsiveness expected on part of child

Type of Parent Involvement

- Family workers personally contact all parents to acquaint them with program and child's progress
- Parent workers instruct parents in use of materials to supplement school program
- Encourage parents to participate in PAC and to volunteer in classroom.

In many ways, this model can be considered the most structured and well defined of all the FT approaches. It is unfortunate that the FT and NFT samples for the Cohort I and II projects in this evaluation were so badly matched. The results of sponsor level analyses for Cohort I-K and I-EF are summarized in Tables 51 and 52. As discussed in the interpretation of project data, these FT and NFT samples represented distinct population subgroups. Hence, the results of significance tests on pupil outcomes are likely invalid, particularly in the analysis of the groups where the matching problem is acute. That is, the FT samples were characterized by Black children from poor families with low baseline scores, whereas the NFT groups were characterized by non-Black children with higher baseline scores from familes that can scarcely be characterized as disadvantaged.

TABLE 51

UNIVERSITY OF OREGON SUMMARY, COHORT I, KINDERGARTEN ENTERING PROJECTS: TWO-YEAR EFFECTS, 1969-1971

OUTCOME MEASURE	UNADJUSTED MEANS			ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	137.6	135.9	1.7	133.4	132.3	1.2	5.31	-9.2	11.6
AFFECT	17.6	17.4	.2	17.6	17.8	-.1	.51	-1.1	.9
WRAT	82.0	78.7	3.3	80.6	77.6	3.0	2.96	-2.8	8.8
QUANTITATIVE	43.0	42.6	.4	41.2	41.8	-.6	1.69	-3.9	2.7
COG. PROCESS	6.7	7.1	-.4	6.5	6.9	-.4	.30	-1.0	.2
READING	59.9	58.1	1.7	58.5	56.6	2.0	2.66	-3.2	7.2
LANGUAGE	28.1	28.0	.1	27.2	27.2	.0	1.43	-2.8	2.8
PARENT DATA									
PARENT-CHILD	-.05	-.02	-.03	.01	.01	.0	.15	-.29	.29
PARENT-SCHOOL	.07	-.39	.46	.06	-.37	.43	.21	.02	.84
CHILD ACADEMIC EXPECTATION	.17	-.17	.34	.21	-.23	.44	.24	-.03	.91
SENSE OF CONTROL	.11	-.15	.27	.09	-.16	.25	.22	-.18	.68
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.42	.48	-.06	.38	1.97	-.19	.13	-.44	.06
PROFESSION. ACCEPT FT	1.89	1.33	.56	.58	1.33	.64	.19	.27	1.01

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*See "Guide for Interpretation of Results" for explanation of table entries.

Table 52

UNIVERSITY OF OREGON SUMMARY, COHORT I, ENTERING FIRST GRADE PROJECTS: TWO-YEAR EFFECTS, 1969-1971

	UNADJUSTED MEANS			ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	140.0	175.2	-35.2	168.7	162.9	5.8	9.63	-13.1	24.7
AFFECT	18.0	18.3	-.3	17.6	18.7	-1.1	.65	-2.4	.2
WRAT	101.4	112.6	-11.2	109.5	108.2	1.3	4.04	-6.6	9.2
QUANTITATIVE	33.6	46.5	-12.9	42.4	42.2	.2	2.89	-5.5	5.9
READING	85.3	99.1	-13.8	99.4	92.1	7.3	6.47	-5.4	20.0
LANGUAGE	21.1	29.7	-8.6	27.3	28.8	-1.5	1.84	-5.1	2.1
PARENT DATA									
PARENT-CHILD	.09	.14	-.06	.11	-.10	.21	.29	-.36	.78
PARENT-SCHOOL	.13	.05	.08	.23	-.19	.42	.37	-.30	1.14
CHILD ACADEMIC EXPECTATION	.54	.15	.39	.50	.06	.43	.42	-.39	1.25
SENSE OF CONTROL	.28	.27	.02	.37	.13	.24	.36	-.47	.95
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.56	.28	.28	.49	.56	-.08	.31	-.69	.53
PROFESSION. ACCEPT FT	1.83	1.33	.50	2.46	1.16	1.29	.48	.35	2.23

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*See "Guide for Interpretation of Results" for explanation of table entries.

These comparison group problems notwithstanding, these analyses do show evidence of greater parental involvement (K stream) and greater teacher acceptance of FT methods (K and EF streams). Also, the classroom observations conducted within these projects show evidence of a high degree of correspondence between the observed teacher processes and those specified by the model, suggesting that the program is being appropriately implemented. If, in subsequent cohorts or in subsequent measurements within these cohorts, a more acceptable degree of control group comparability can be established, then the impact and effects of this model on pupil gains can be properly assessed.

BEHAVIOR ANALYSIS APPROACH

University of Kansas

Sponsor's Intended Approach

The behavior analysis model is based on the experimental analysis of behavior, which uses a token exchange system to provide precise, positive reinforcement of desired behavior. The tokens provide an immediate reward to the child for successfully completing a learning task. He can later exchange these tokens for an activity he particularly values, such as playing with blocks or listening to stories. Initial emphasis in the behavioral analysis classroom is on developing social and classroom skills, followed by increasing emphasis on the core subjects of reading, mathematics, and handwriting. The goal is to achieve a standard but still flexible pattern of instruction and learning that is both rapid and pleasurable.

The model calls for careful and accurate definitions of instructional objectives, whether they have to do with social skills or with academic skills. Curriculum materials used describe the behavior a child will be capable of at the end of a learning sequence and clearly state criteria for judging a response as "correct." They also require the teacher to make frequent reinforcing responses to the child's behavior and permit the child to progress through learning tasks at his own pace. The child earns more tokens during the initial stages of learning a task and progressively fewer as he approaches mastery, the object being to move from external rewards to self-motivated behavior. Since a child with few tokens to exchange for preferred activity is likely to be a child needing more attention, the system guides the teacher in evaluating her own performance.

In the behavior analysis classroom, four adults work together as an instructional team. This includes a teacher who leads the team and assumes responsibility for the reading program, a full-time aide who concentrates on small group math instruction, and two project parent aides who attend to spelling, handwriting, and individual tutoring. Parent aides are employed on a rotating basis with other parents. They first serve as classroom trainees for a period of several weeks; some of these parents, in turn, become aides for a full semester. Full-time teacher aides are employed from the latter group. The short trainee cycle allows a great number of parents to become directly involved in the program. They then carry its main features into the home situation.

Careful staff planning is an integral part of the behavior analysis daily schedule. Each day includes planning sessions, periods of formal instruction, and special activity periods during which the children exchange their tokens for an activity they choose. Instruction and special activity periods alternate throughout the day, with the amount of time for instruction increasing as the amount of reinforcement required to sustain motivation decreases.

Evaluation of the model begins with an entry behavior inventory and diagnostic tests that determine where each child should begin a sequence of instruction and that also help to monitor his progress through the sequence. The curriculum materials used also provide for periodic testing and monitoring of achievement gains. Throughout the school year a computerized record-keeping system issues to the teacher a weekly progress report on each child and also reports progress for the class as a whole.

Generally, implementation of the behavior analysis model proceeds in three phases. In the first, the sponsor supplies substantial advisory support and training in the procedures and techniques of the program. In the second, local leadership takes over and local staff training coordinators assume more and more of the training and support responsibility. Finally, only periodic consulting with the sponsor is needed.

Individual Project Results

Five samples from three different projects sponsored by the University of Kansas (UK) were included in the analysis of interim effects. The distribution of these evaluation samples in terms of cohort, outcome, and project is as follows:

Cohort	First-year Effects	Second-year Effects
IK	(projects b & c)	(projects a, b, & c)

Project UK(a)

Two-year evaluation data for Project UK(a) are summarized in Table 53. This relatively small project is located within the large Eastern population center. The anticipated FT expenditure was $763 per pupil, and the pupil/PAC member ratio was 9.6.

TABLE 53

PROJECT DATA TABLE--UNIVERSITY OF KANSAS PROJECT A, COHORT 1, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL		PROCESS DATA
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	2	5	-3	OVERALL ACHIEVEMENT	137.6	133.2	4.4	121.9	132.0	-10.1	11.17	-32.0	11.8	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	12.5	3.2	9.3											
QUANT. PRESCORE	22.4	18.9	3.5	AFFECT	16.6	17.4	-0.8	17.2	17.1	0.1	1.17	-2.2	2.4	REGION . . . . MIDDLE ATLANTIC
COG. PROCESS PRESCORE	5.6	4.4	1.2											
READING PRESCORE	40.8	34.7	6.1	ATTENDANCE	14.5	15.8	-1.3	12.9	14.0	-1.1	3.66	-8.3	6.1	DISTANCE TO NEAREST SMSA . . WITHIN
LANGUAGE PRESCORE	10.9	8.1	2.8											
AFFECT PRESCORE	15.1	17.0	-1.9	WRAT TOTAL	80.5	80.4	0.1	72.5	80.7	-8.2	6.04	-20.0	3.6	SIZE OF NEAREST SMSA 16,207,000
AGE (JUNE '71)	84.0	84.1	-0.1											
% CLASSROOM MALE	41.2	44.3	-3.1	QUANTITATIVE	47.7	41.7	6.0	42.6	41.0	1.6	3.50	-5.4	8.6	PERCENT NONWHITE 24
% CLASSROOM BLACK	41.2	13.0	28.2											
% PRESCHOOL (OR NO. MOS.)	65.3	39.7	25.6	COGNITIVE PROCESSES	7.1	6.5	0.6	6.6	6.3	0.3	0.67	-1.0	1.6	PROJECT SIZE (PUPILS) . . . 211
% PARENTS W/O HS DIPL.	59.1	57.0	2.1											
% PARENTS W SKILLED OCCUP.	28.3	64.6	-36.3	READING SKILLS	57.2	57.1	0.1	49.4	56.2	-6.8	5.54	-17.7	4.1	NO. PUPILS/PAC MEMBER . . . 9.6
% PARENTS BLACK	40.9	14.7	26.2											
% PARENTS POVERTY ELIGIBLE	84.3	51.3	33.0	LANGUAGE ARTS	25.5	27.9	-2.4	23.2	28.2	-5.0	3.08	-11.0	1.0	FT PER-PUPIL EXPENDITURE . . 763
% HEAD HOUSEHOLD EMPLOYED	81.8	76.3	5.5											
% HEAD HOUSEHOLD MALE	77.3	67.0	10.3											CLASSROOM OBSERVATION DATA NOT AVAILABLE FOR THIS PROJECT
				PART II PARENT EVALUATION DATA										
NO. CLASSROOM GROUPS	2	5	-3	PARENT-CHILD INTERACT	-.061	-.023	-.038	.006	-.035	.041	.360	-.66	.75	
AV. PARENTS/CLASSRM GRP	10	3	7											
% W/O HIGH SCHOOL DIPLOMA	59.1	57.0	2.1											
% W SKILLED OCCUP.	28.3	64.6	-36.3	PARENT-SCHOOL INVOLVE	.379	.037	.342	.445	.330	.115	.488	-.84	1.07	
% POS EVAL OF CHILD LANG	91.6	83.3	8.3											
% BLACK	40.9	14.7	26.2											
% REPORTING USE OF PRESCHOOL	65.3	39.7	25.6	CHILD ACADEMIC EXPECT	.337	.152	.185	-.182	-.392	.210	.505	-.78	1.20	
% POVERTY ELIGIBLE	84.3	51.3	33.0											
% HEAD HOUSEHOLD EMPLOYED	81.8	76.3	5.5											
% HEAD HOUSEHOLD MALE	77.3	67.0	10.3	SENSE OF CONTROL	.130	.130	0	.170	.434	-.264	.478	-1.20	.67	

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*See "Guide for Interpretation of Results" for explanation of table entries.

Baseline data indicate the two FT and five NFT classrooms were moderately comparable, but that more FT pupils came from poor Black families. Interestingly, the FT pupils averaged higher than the NFT pupils on most of the baseline measures. After adjustments for these baseline differences, outcome data failed to indicate any significant FT/NFT differences on either pupil or parent variables. Since process data were not gathered for this project, no further interpretations are possible.

Project UK(b)

The second-year pupil data in Project UK(b) are summarized in Table 54, and evaluation data for the first-year subset are summarized in Table 55. This project is also located within a large metropolitan area in the Middle Atlantic region. Project UK(b) was large (1,240 pupils), anticipated spending $832 per pupil and averaged one PAC member for each 9.6 pupils. Because of the size of this project, total PAC membership was extensive (i.e., 129 members).

The baseline data for this project indicate that FT and NFT pupils had similar entering scores. All were Black, and classroom compositions were reasonably equivalent. However, serious problems emerge in the parent data. The FT parents averaged below the NFT parents on educational, employment, and occupational levels, yet all NFT families were rated as poverty eligible. This phenomenon dramatically illustrates the missing data problem referred to earlier. In this project, poverty data were available only for those NFT families who were, in fact, poverty eligible. Therefore, no data on those NFT families who were not poverty eligible were included. Since poverty is highly related to outcomes, we feel it should be included as a covariable. But restricting the data to subsets of complete data would eliminate one of the two NFT classrooms, hence precluding analysis. Thus again we are faced with a sample of data that cannot be adequately analyzed because of comparison-group problems. Our feeling regarding estimation of effects for this specific project is that outcomes are in favor of FT. Unfortunately, we cannot attach a significance level to this interpretation, since the covariable values have produced distortions in analysis.

Classroom observation factor scores, which were available only for the FT classes, reveal that the instructional process corresponds closely to that intended by the sponsor. The strongest curriculum component, and the only one that is above average, is the programmed academic factor; the weakest are the child-initiated interactions and the self-regulatory factors.

TABLE 54

PROJECT DATA TABLE--UNIVERSITY OF KANSAS PROJECT B, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	CONFIDENCE INTERVAL LOW	CONFIDENCE INTERVAL HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	14	2	12	OVERALL ACHIEVEMENT	134.0	119.8	14.2	134.1	125.5	8.6	10.24	-11.5	28.7
AVERAGE PUPILS/CLASSROOM	8.2	4.0	4.2										
QUANT. PRESCORE	19.1	18.6	0.5	AFFECT	18.0	17.7	0.3	18.1	17.6	0.5	1.08	-1.6	2.6
COG. PROCESS PRESCORE	4.2	4.5	-0.3										
READING PRESCORE	35.1	32.8	2.3	ATTENDANCE	13.4	10.5	2.9	14.8	13.2	1.6	3.35	-5.0	8.2
LANGUAGE PRESCORE	9.3	8.6	0.7										
AFFECT PRESCORE	15.3	15.7	-0.4	WRAT TOTAL	79.3	71.8	7.5	77.9	72.7	5.2	5.53	-5.6	16.0
AGE (JUNE '71)	82.7	85.6	-2.9										
% CLASSROOM MALE	59.4	69.0	-9.6	QUANTITATIVE	43.7	38.2	5.5	44.1	39.8	4.3	3.29	-2.1	10.7
% CLASSROOM BLACK	100.0	100.0	0										
% PRESCHOOL (OR NO. MOS.)	46.6	31.0	15.6	COGNITIVE PROCESSES	7.2	6.0	1.2	7.2	6.2	1.0	0.61	-.2	2.2
% PARENTS W/O HS DIPL.	73.5	60.0	13.5										
% PARENTS W SKILLED OCCUP.	31.8	80.0	-48.2	READING SKILLS	56.9	51.0	5.9	56.1	53.5	2.6	5.08	-7.4	12.6
% PARENTS BLACK	100.0	100.0	0										
% PARENTS POVERTY ELIGIBLE	71.0	100.0	-29.0	LANGUAGE ARTS	26.3	24.7	1.6	26.7	26.0	0.7	2.82	-4.8	6.2
% HEAD HOUSEHOLD EMPLOYED	56.8	80.0	-23.2										
% HEAD HOUSEHOLD MALE	52.2	80.0	-27.8										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	12	2	10										
AV. PARENTS/CLASSRM GRP	4.4	3.0	1.3	PARENT-CHILD INTERACT	-.269	.106	-.375	-.251	-.094	-.157	.337	-.82	.50
% W/O HIGH SCHOOL DIPLOMA	75.5	60.0	15.5										
% W SKILLED OCCUP.	30.3	80.0	-49.7										
% POS EVAL OF CHILD LRNG	64.8	78.3	-13.5	PARENT-SCHOOL INVOLVE	-.098	-.709	.611	-.054	-.707	.653	.457	-.24	1.55
% BLACK	100.0	100.0	0										
% REPORTING USE OF PRESCHOOL	43.4	31.9	12.5										
% POVERTY ELIGIBLE	71.0	100.0	-29.0	CHILD ACADEMIC EXPECT	-.076	.522	-.598	.389	.835	-.446	.473	-1.37	.48
% HEAD HOUSEHOLD EMPLOYED	53.2	80.0	-26.8										
% HEAD HOUSEHOLD MALE	48.2	80.0	-31.8	SENSE OF CONTROL	-.208	-.506	.298	-.201	-.418	.217	.448	-.66	1.10

PROCESS DATA		
PROJECT DESCRIPTORS		
REGION	MIDDLE ATLANTIC	
DISTANCE TO NEAREST SMSA . .	WITHIN	
SIZE OF NEAREST SMSA	4,201,000	
PERCENT NONWHITE	34	
PROJECT SIZE (PUPILS) . . .	1240	
NO. PUPILS/PAC MEMBER . . .	9.6	
FT PER-PUPIL EXPENDITURE . .	832	
CLASSROOM OBSERVATION FACTOR SCORES		
FACTOR NAME	FT	NFT
SELF REGULATORY	-.56	
CHILD-INITIATED INTERACTIONS	-1.37	
PROGRAMMED ACADEMIC . . .	1.19	
EXPRESSIVE	-.41	
CHILD SELF-LEARNING . . .	-.26	

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 55

PROJECT DATA TABLE--UNIVERSITY OF KANSAS PROJECT B, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	14	2	12	OVERALL ACHIEVEMENT	103.9	91.5	12.4	104.6	99.2	5.4	7.31	-8.9	19.7
QUANT. PRESCORE	19.1	18.7	.4										
COG. PROCESS PRESCORE	4.2	4.5	-.3	AFFECT	15.7	15.2	.5	16.6	15.7	.9	1.65	-2.3	4.1
READING PRESCORE	35.1	32.8	2.3										
LANGUAGE PRESCORE	9.3	8.6	.7	ATTENDANCE	19.9	6	13.9	18.5	8.7	9.8	4.83	.3	19.3
AFFECT PRESCORE	15.3	15.7	-.4										
AGE (JUNE '71)	82.7	85.6	-2.9	WRAT TOTAL	49.8	44.2	5.6	49.6	50.2	-.6	4.16	-8.8	7.6
% CLASSROOM MALE	59.4	69.0	-9.6										
% CLASSROOM BLACK	100	100	0	QUANTITATIVE	28.8	24.2	4.6	29.6	25.5	4.1	2.12	-.1	8.3
% PRESCHOOL (OR NO. MOS.)	46.6	31	15.6										
% PARENTS W/O HS DIPL.	73.5	60	13.5	COGNITIVE PROCESSES	7.1	6.5	.6	7.7	7.0	.7	.70	-.7	2.1
% PARENTS W/SKILLED OCCUP.	31.8	80	-48.2										
% PARENTS BLACK	100	100	0	READING SKILLS	55.7	49.9	5.8	55.2	55.7	-.5	4.99	-10.3	9.3
% PARENTS POVERTY ELIGIBLE	71	100	-29										
% HEAD HOUSEHOLD EMPLOYED	56.8	80	-23.2	LANGUAGE ARTS	12.2	10.8	1.4	12.5	11.4	1.1	1.08	-1.0	3.2
% HEAD HOUSEHOLD MALE	52.2	80	-27.8										

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*See "Guide for Interpretation of Results" for explanation of table entries.

Differences between one- and two-year data (I-K2 _versus_ IK1) in the unadjusted outcomes on pupil variables also show encouraging evidence of impact. That is, the two-year results show larger differences than the one-year results on every cognitive measure. Since these two groups were nearly equivalent at the baseline, the probability that this event would happen by chance alone is small enough (less than 2 percent for each set of outcomes) that we are reasonably certain the program in this project is producing its intended impact on pupil growth.

Project UK(c)

The remaining University of Kansas project, located over 75 miles from a west north central urban area, was also moderately small (277 pupils) with an average of 10 pupils per PAC member and an anticipated per-pupil FT expenditure of $773. Two data samples were analyzed for this project: a second-year group and a first-year subset. These data are presented in Tables 56 and 57, respectively.

The control variable data for the four FT and five NFT samples show a very good match. FT groups are nearly equivalent to NFT groups on prescores, classroom compositions, and all parent measures. In fact, the FT group appears only negligibly more disadvantaged than NFT.

Differences in FT/NFT pupil measures fail to show any significant two-year program effects. Parent differences also fail to reach significance. Classroom observation data were not available to aid in interpreting these results.

Analysis of the one-year subset reveals that, at the end of one year of the program, significant FT-favoring differences existed on achievement, WRAT, quantitative, and reading measures. Just why these differences disappear in the two-year effects data is far from clear. One possibility is that NFT teachers are adopting the FT methods. Another possible explanation is that FT teachers altered their procedures or levels of effort. But since teacher data were unavailable for this sample, any such explanation is speculative and unsupportable at this point in the evaluation.

TABLE 56

PROJECT DATA TABLE--UNIVERSITY OF KANSAS PROJECT C, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA							
												CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	4	5	-1	OVERALL ACHIEVEMENT	156.8	156.1	0.7	132.2	133.9	-1.7	8.61	-18.6	15.2	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	17.0	6.2	10.8											
QUANT. PRESCORE	25.0	23.3	1.7	AFFECT	17.6	18.3	-0.7	18.1	18.8	-0.7	0.91	-2.5	1.1	REGION . . . . WEST NORTH CENTRAL
COG. PROCESS PRESCORE	6.8	5.7	1.1											
READING PRESCORE	47.5	47.4	0.1	ATTENDANCE	7.2	11.3	-4.1	5.6	10.2	-4.6	2.82	-10.1	.9	DISTANCE TO NEAREST SMSA . 75-120 MILES
LANGUAGE PRESCORE	12.6	12.1	0.5											
AFFECT PRESCORE	16.1	16.0	0.1	WRAT TOTAL	89.9	90.2	-0.3	78.9	80.2	-1.3	4.65	-10.4	7.8	SIZE OF NEAREST SMSA . . . 664,000
AGE (JUNE '71)	86.7	87.8	-1.1											
% CLASSROOM MALE	47.5	52.6	-5.1	QUANTITATIVE	49.4	47.2	2.2	41.0	39.7	1.3	2.76	-4.1	6.7	PERCENT NONWHITE 18
% CLASSROOM BLACK	24.5	15.7	8.8											
% PRESCHOOL (OR NO. MOS.)	33.6	42.4	-8.8	COGNITIVE PROCESSES	7.7	7.0	0.7	6.9	6.2	0.7	0.52	-.3	1.7	PROJECT SIZE (PUPILS) . . 277
% PARENTS W/O HS DIPL.	66.4	81.1	-14.7											
% PARENTS W SKILLED OCCUP.	37.8	34.2	3.6	READING SKILLS	66.8	66.9	-0.1	57.1	57.8	-0.7	4.27	-9.1	7.7	NO. PUPILS/PAC MEMBER . . 9.9
% PARENTS BLACK	24.4	19.6	4.8											
% PARENTS POVERTY ELIGIBLE	63.1	63.7	-0.6	LANGUAGE ARTS	32.8	35.0	-2.2	27.1	30.1	-3.0	2.37	-7.6	1.6	FT PER-PUPIL EXPENDITURE . 773
% HEAD HOUSEHOLD EMPLOYED	79.0	88.9	-9.9											
% HEAD HOUSEHOLD MALE	82.2	90.0	-7.8											CLASSROOM OBSERVATION DATA NOT AVAILABLE FOR THIS PROJECT
				PART II PARENT EVALUATION DATA										
NO. CLASSROOM GROUPS	4	5	-1	PARENT-CHILD INTERACT	-.193	.314	-.507	-.188	.304	.492	.282	-.06	1.04	
AV. PARENTS/CLASSRM GRP	16.2	6.2	10.0											
% W/O HIGH SCHOOL DIPLOMA	66.4	81.1	-14.7											
% W SKILLED OCCUP.	37.8	34.2	3.6	PARENT-SCHOOL INVOLVE	-.389	-.490	.101	-.098	-.121	.023	.382	-.73	.77	
% POS EVAL OF CHILD LRNG	90.1	100.0	-9.9											
% BLACK	24.4	19.6	4.8											
% REPORTING USE OF PRESCHOOL	33.6	28.0	5.6	CHILD ACADEMIC EXPECT	-.199	.123	-.322	-.762	-.630	-.132	.396	-.91	.64	
% POVERTY ELIGIBLE	63.1	63.7	-0.6											
% HEAD HOUSEHOLD EMPLOYED	79.0	88.9	-9.9											
% HEAD HOUSEHOLD MALE	82.2	90.0	-7.8	SENSE OF CONTROL	-.355	-.693	.358	-.138	-.510	.372	.374	-.36	1.11	

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 57

PROJECT DATA TABLE--UNIVERSITY OF KANSAS PROJECT C, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	5	-1	OVERALL ACHIEVEMENT	131.6	109.9	21.7	110.5	94.6	15.9	5.79	4.6	27.2
QUANT. PRESCORE	25.0	23.3	1.7										
COG. PROCESS PRESCORE	6.8	5.7	1.1	AFFECT	17.2	18.1	-.9	15.9	17.2	-1.3	1.31	-3.9	1.3
READING PRESCORE	47.5	47.4	.1										
LANGUAGE PRESCORE	12.6	12.1	.5	ATTENDANCE	9.9	9.5	.4	17.6	15.6	2.0	3.83	-5.5	9.5
AFFECT PRESCORE	16.1	16.0	.1										
AGE (JUNE '71)	86.7	87.8	-1.1	WRAT TOTAL	64.2	51.6	12.6	53.9	43.8	10.1	3.30	3.6	16.6
% CLASSROOM MALE	47.4	52.5	-5.1										
% CLASSROOM BLACK	24.4	15.7	8.7	QUANTITATIVE	36.4	31.1	5.3	31.4	27.9	3.5	1.68	.2	6.8
% PRESCHOOL (OR NO. MOS.)	33.6	42.4	-8.8										
% PARENTS W/O HS DIPL.	66.4	81.1	-14.7	COGNITIVE PROCESSES	8.9	7.6	1.3	7.3	6.3	1.0	.56	-.1	2.1
% PARENTS W/SKILLED OCCUP.	37.8	34.2	3.6										
% PARENTS BLACK	24.4	19.6	4.8	READING SKILLS	70.5	57.5	13.0	57.5	47.5	10.0	3.96	2.2	17.7
% PARENTS POVERTY ELIGIBLE	63.1	63.7	-.6										
% HEAD HOUSEHOLD EMPLOYED	79.0	88.9	-9.9	LANGUAGE ARTS	15.9	13.7	2.2	13.9	12.5	1.4	.85	-.3	3.1
% HEAD HOUSEHOLD MALE	82.2	90.0	-7.8										

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*See "Guide for Interpretation of Results" for explanation of table entries.

Summary

The salient features of this approach can be outlined as follows:

Focus and Objectives--emphasizes short range program objectives

- Child
  - Cognitive (major focus)
    - Increase academic achievement in basic skills
  - Affective
    - Develop social skills

Curricular Approach

- Teacher's role that of director
- Desired behavior is reinforced with tokens, which are later exchanged for activity of child's choice
- Individual focus with child proceeding at own rate
- Highly structured curriculum, plus free play time
- Structured responsiveness expected on part of child

Type of Parent Involvement

- Train parents for direct involvement in classrooms as parent aides
- Advise parents about how to continue education of child at home.

The project by project evidence for the interim impact of this approach is mixed and, because of data problems, often uninterpretable. The one-year subset data appeared to indicate that significant academic progress was resulting from the program, but such evidence was not replicated in the two-year data. Results of the sponsor level analysis on the Cohort I-K projects are presented in Table 58. They suggest that the model has produced significant pupil gains on the cognitive process measures. The results also show that NFT samples averaged significantly higher on the parent-child interaction measure. Because of missing data and the lack of comparability of the comparison groups, these results are probably invalid. Thus, we cannot confidently make statements regarding the relative impacts of this model at this time.

TABLE 58

UNIVERSITY OF KANSAS SUMMARY, COHORT I, KINDERGARTEN ENTERING PROJECTS: TWO-YEAR EFFECTS, 1969-1971

	UNADJUSTED MEANS			ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	138.9	140.5	-1.6	129.8	131.5	-1.6	5.57	-12.5	9.3
AFFECT	17.8	17.8	.0	17.7	17.6	.2	.54	-.9	1.2
WRAT	81.5	83.1	-1.5	66.4	68.6	-2.2	3.11	-8.3	3.9
QUANTITATIVE	45.2	43.4	1.8	42.8	41.3	1.4	1.78	-2.1	4.9
COG. PROCESS	7.3	6.6	.7	7.0	6.3	.7	.32	.1	1.3
READING	58.9	60.2	-1.2	54.4	56.2	-1.8	2.80	-7.3	3.7
LANGUAGE	27.5	30.3	-2.8	25.6	27.8	-2.3	1.50	-5.2	.6
PARENT DATA									
PARENT-CHILD	-.23	.14	-.38	-.14	.19	-.32	.16	-.63	-.01
PARENT-SCHOOL	-.11	-.31	.20	.01	-.15	.16	.22	-.27	.59
CHILD ACADEMIC EXPECTATION	-.06	.20	-.26	.02	.12	-.09	.25	-.58	.40
SENSE OF CONTROL	-.20	-.32	.12	-.14	-.26	.12	.22	-.31	.55

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

COGNITIVELY ORIENTED CURRICULUM MODEL
High/Scope Educational Research Foundation

Sponsor's Intended Approach

The High/Scope Educational Research Foundation model represents a synthesis of research in preschool and early elementary education. The program recommends an "open framework" classroom that combines emphasis on active experience and involvement of the child; a systematic, consistent, and thoroughly planned approach to child development and instruction by the teacher; and continuous assessment of each child's level of development so that appropriate materials and activities can be provided. This approach is based on the conviction that telling and showing do not teach, but that active experience with real objects does.

This approach uses a cognitively oriented curriculum, which takes into account the very real difference between the way children "think" and the way adults do. The model's aim is to nurture in children the thinking skills they will need throughout their school years and adult lives, as well as the academic subject competencies traditionally taught in the early elementary grades. It emphasizes and is designed to support the process of learning rather than particular subject matter. It is central to High/Scope's program that learning should be active, that it occurs through the child's action on the environment and his resultant discoveries.

Each month one or more sponsor staff members spend up to a week at each project site. Field Consultants assist with issues relating to the instructional model: room arrangement, scheduling, teaching methods, planning, learning centers, and the like. Program Specialists deal with specific academic areas--math, science, social studies, and communication--and with the curriculum materials, both commercially developed and those prepared by the sponsor. Curriculum Developers and administrative personnel also travel to projects as often as is necessary and feasible.

High/Scope Foundation staff present three major training and planning workshops at the Foundation during the year--in the spring, summer, and winter. In the fall, they conduct individual workshops at each project, primarily for teaching staff. In addition, High/Scope Foundation operates laboratory classrooms to increase the scope and versatility of training and curriculum development activities.

Staff at projects include a project director, curriculum assistants, classroom staff, parent program staff, and home visitors. Each classroom has two teachers and an aide, or a single teacher with two aides, who operate as a teaching team. The instructional staff is supervised by and receives continuing inservice training and program monitoring from the local Curriculum Assistant (CA). The CAs therefore receive the most extensive training by Foundation staff. CAs bear prime responsibility for planning, demonstrating, and evaluating activities in the six to eight classrooms under their supervision and, in general, for ensuring smooth implementation of the High/Scope model at each field site.

The parent program and home visit staff vary according to local needs and objectives. Each local project essentially designs and implements its own parent program, with general guidelines and consultation from High/Scope Foundation staff.

The home teaching component of the program consists of planned visits to the home by classroom teachers or individuals hired specifically as home visitors. The child, a parent, and the home visitor work together during the visit, focusing on current and past activities at school and on supportive activities that may be carried out at home.

Individual Project Results

Five samples from three different projects sponsored by High/Scope Educational Research Foundation were included in the analysis of interim effects. The distribution of these evaluation samples in terms of cohort, outcome, and project is as follows:

Cohort	First-year Effects	Second-year Effects
IK		(Project c)
IEF	(Projects a & b)	(Projects a & b)

Project HS(c)

The evaluation data for Project HS(c) are presented in Table 59. This is a relatively small kindergarten entrance project located in a large, racially mixed urban mid-Atlantic population center. The project anticipated near average per pupil expenditures and maintained a lower than average PAC/pupil ratio of approximately one PAC member for every 30 pupils.

TABLE 39

PROJECT DATA TABLE--HIGH/SCOPE PROJECT C, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	5	0	OVERALL ACHIEVEMENT	110.4	125.9	-15.5	100.6	128.4	-27.8	8.72	-44.9	-10.7
AVERAGE PUPILS/CLASSROOM	11.0	4.6	6.4										
QUANT. PRESCORE	22.3	19.5	2.8	AFFECT	16.9	15.5	1.4	17.0	15.1	1.9	0.92	.1	3.7
COG. PROCESS PRESCORE	6.7	4.0	2.7										
READING PRESCORE	39.9	32.7	7.2	ATTENDANCE	16.4	24.0	-7.6	16.9	24.9	-8.0	2.86	-13.6	-2.4
LANGUAGE PRESCORE	12.3	9.1	3.2										
AFFECT PRESCORE	15.0	13.6	1.4	WRAT TOTAL	66.0	79.9	-13.9	60.5	79.7	-19.2	4.71	-28.4	-10.0
AGE (JUNE '71)	83.8	82.5	1.3										
% CLASSROOM MALE	53.0	41.0	12.0	QUANTITATIVE	32.6	36.5	-3.9	29.8	38.0	-8.2	2.80	-13.7	-2.7
% CLASSROOM BLACK	96.5	93.5	3.0										
% PRESCHOOL (OR NO. MOS.)	75.8	100.0	-24.2	COGNITIVE PROCESSES	6.7	5.7	1.0	6.6	5.9	0.7	0.52	-.3	1.7
% PARENTS W/O HS DIPL.	57.4	53.4	4.0										
% PARENTS W SKILLED OCCUP.	33.7	70.0	-36.3	READING SKILLS	48.4	56.1	-7.7	43.8	56.3	-12.5	4.32	-21.0	-4.0
% PARENTS BLACK	96.4	94.6	1.8										
% PARENTS POVERTY ELIGIBLE	63.3	54.8	8.5	LANGUAGE ARTS	23.1	27.7	-4.6	20.9	28.2	-7.3	2.40	-12.0	-2.6
% HEAD HOUSEHOLD EMPLOYED	44.7	74.0	-29.3										
% HEAD HOUSEHOLD MALE	46.4	73.4	-27.0										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	5	5	0	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	8.2	5.0	3.2	INTERACT	.285	.439	-.154	.362	.381	-.020	.275	-.57	.51
% W/O HIGH SCHOOL DIPLOMA	57.4	53.4	4.0										
% W SKILLED OCCUP.	33.7	70.0	-36.3	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	78.0	82.3	-4.3	INVOLVE	-.403	-.274	-.129	-.625	-.683	.058	.372	-.67	.79
% BLACK	96.4	94.6	1.8										
% REPORTING USE OF PRESCHOOL	75.8	100.0	-24.2	CHILD ACADEMIC									
% POVERTY ELIGIBLE	63.3	54.8	8.5	EXPECT	.078	.522	-.444	.300	.705	-.405	.385	-1.16	.35
% HEAD HOUSEHOLD EMPLOYED	44.7	74.0	-29.3										
% HEAD HOUSEHOLD MALE	46.4	73.4	-27.0	SENSE OF CONTROL	.045	.201	-.156	-.089	.046	-.135	.364	-.848	.378

PROCESS DATA

PROJECT DESCRIPTORS

REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA .	WITHIN
SIZE OF NEAREST SMSA . . .	16,207,000
PERCENT NONWHITE	25
PROJECT SIZE (PUPILS) . . .	400
NO. PUPILS/PAC MEMBER. . .	30.3
FT PER-PUPIL EXPENDITURE .	809

CLASSROOM OBSERVATION DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

The baseline data for this project show some highly unusual patterns, which suggest to us that the prescores on the tests may be invalid. Specifically, the families constituting this cohort sample are poor, Black, and below average in educational and employment levels. Also, these FT families display the commonly noted pattern of being more disadvantaged than their comparison groups. However, the baseline test scores show FT pupils consistently (and significantly at the .05 level) above NFT pupils on all measures. This difference in scores is in sharp contrast to the characteristic and understandable pattern noted in all other projects in this evaluation: namely, the direct relationship between prescores and poverty indicators. Furthermore, this prescore bias cannot be attributed to preschool experience since the FT pupils had proportionately less such experience than the NFT pupils.

If (as we strongly suspect but are unable to confirm*) the prescores were inflated in favor of FT, the covariance adjustments would cause the resultant FT/NFT contrast to be seriously biased against FT. Since nearly all cognitive test variables show significant differences in favor of NFT, we suspect that such biasing occurred. The exceptions are the cognitive process measure, the affect measure (significantly in favor of FT) and the attendance measure (also significantly in favor of FT). None of the parent measures showed significant program effects.

We are faced with two alternatives. Either we (a) accept the project data at face value and interpret the pupil results as showing the FT group as well above NFT on pretest measures but well below NFT on posttest measures, thus producing evidence that the FT program hindered pupil development, or (b) consider the pretest data as invalid and exclude the project data from our interpretation of the effects of this model. Although we can find no independent evidence to support the interpretation that baseline data are invalid, we believe that the circumstantial evidence is sufficiently compelling to make exclusion of this project from the evaluation of this sponsor's effects the more prudent course of action.

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*Fall 1969 baseline data were collected under the decentralized field operations procedure. Information regarding procedures used in specific sites was available only through records provided by site personnel.

Project HS(b)

The evaluative data for the Project HS(b) sample, a Cohort I, Entering First Grade sample, are summarized in Table 60 for the second-year effects, and in Table 61 for the first-year subset. This moderately sized project is located in a primarily white rural community in the south Atlantic region. The anticipated per-pupil expenditure of $928 is slightly above the overall average, and the rate of one PAC member per 20 pupils is about average.

Baseline averages for the four FT and six NFT classrooms included in this project sample show that the two groups lack comparability on nearly all indicators. The FT classes systematically (and significantly) scored lower on all baseline measures. FT pupils were primarily Black, whereas NFT pupils were primarily non-Black. FT pupils came from substantially more disadvantaged home environments than NFT pupils (their parents were poorer, ethnically different, less skilled, and less well educated). Teachers of the two groups were relatively comparable, although NFT teachers were better integrated into their pupils' communities than were FT teachers.

Results of analysis show that NFT pupils scored significantly higher than FT pupils on the affect measure and that NFT parents felt a significantly greater sense of control than FT parents did. All other results failed to reach significance; in general, FT groups scored lower than NFT groups. First-year data for these same pupils show similar results. Comparison of first- and second-year effects suggests that the program is failing to produce the targeted improvements on pupil, parent, and teacher outcome variables. However, the evidence of control group bias is so pronounced as to suggest that the groups in our sample are drawn from two initially distinct populations. If they are, then the probability of inappropriate comparisons and differential regression on covariables is increased and serious questions are raised about the validity of this project analysis. We believe the risk of faulty interpretation resulting from essentially invalid comparisons is sufficiently great in this case to warrant exclusion of this project from the interim evaluation.

TABLE 60

PROJECT DATA TABLE--HIGH/SCOPE PROJECT B, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	4	6	-2	OVERALL ACHIEVEMENT	93.4	159.5	-66.1	122.2	136.3	-14.1	13.10	-39.8	11.6	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	16.0	9.5	6.5											
QUANT. PRESCORE	24.3	32.7	-8.4	AFFECT	18.6	19.4	-0.8	18.4	19.2	-8.2	0.85	-9.9	-6.5	REGION . . . . SOUTH ATLANTIC
COG. PROCESS PRESCORE	6.6	7.8	-1.2											
READING PRESCORE	47.0	65.5	-18.5	ATTENDANCE	8.2	9.0	-0.8	4.9	8.6	-3.7	4.34	-12.2	4.8	DISTANCE TO NEAREST SMSA . 30-40 MILES
LANGUAGE PRESCORE	12.2	14.6	-2.4											
AFFECT PRESCORE	16.0	18.4	-2.4	WRAT TOTAL	79.8	103.9	-24.1	88.7	94.9	-6.2	5.63	-17.2	4.8	SIZE OF NEAREST SMSA . . . 243,000
AGE (JUNE '71)	94.7	97.2	-2.5											
% CLASSROOM MALE	52.5	58.1	-5.6	QUANTITATIVE	26.2	43.0	-16.8	33.5	39.0	-5.5	3.94	-13.2	2.2	PERCENT NONWHITE 9
% CLASSROOM BLACK	76.9	19.5	57.4											
% PRESCHOOL (OR NO. MOS.)	87.8	24.2	63.6	READING SKILLS	48.6	87.4	-38.8	66.0	73.3	-7.3	8.69	-24.3	9.7	PROJECT SIZE (PUPILS). . . 400
% PARENTS W/O HS DIPL.	60.1	31.8	28.3											
% PARENTS W SKILLED OCCUP.	25.9	65.0	-39.1	LANGUAGE ARTS	18.6	29.1	-10.5	22.7	24.0	-1.3	2.61	-6.4	3.8	NO. PUPILS/PAC MEMBER . . 20.0
% PARENTS BLACK	76.6	19.7	56.9											
% PARENTS POVERTY ELIGIBLE	80.7	21.4	59.3											FT PER-PUPIL EXPENDITURE . 928
% HEAD HOUSEHOLD EMPLOYED	88.9	94.2	-5.3											
% HEAD HOUSEHOLD MALE	83.8	91.7	-7.9											
				PART II PARENT EVALUATION DATA										CLASSROOM OBSERVATION DATA NOT AVAILABLE FOR THIS PROJECT
NO. CLASSROOM GROUPS	4	6	-2	PARENT-CHILD										
AV. PARENTS/CLASSRM GRP	15.8	7.0	8.8	INTERACT	.245	.409	-.164	.312	.031	.281	.402	-.51	1.07	
% W/O HIGH SCHOOL DIPLOMA	60.1	31.8	28.3											
% W SKILLED OCCUP.	25.9	65.0	-39.1	PARENT-SCHOOL										
% POS EVAL OF CHILD LRNG	65.0	63.0	2.0	INVOLVE	.032	.105	-.073	-.392	-.043	-.349	.409	-1.15	.45	
% BLACK	76.6	19.7	56.9											
% REPORTING USE OF PRESCHOOL	87.8	24.2	63.6	CHILD ACADEMIC										
% POVERTY ELIGIBLE	80.7	21.4	59.3	EXPECT	-.215	.052	-.267	-.336	.028	-.364	.404	-1.16	.43	
% HEAD HOUSEHOLD EMPLOYED	88.9	94.2	-5.3											
% HEAD HOUSEHOLD MALE	83.8	91.7	-7.9	SENSE OF CONTROL	-.439	.461	-.900	-.473	.318	-.791	.394	-1.56	-.02	
				PART III TEACHER EVALUATION DATA										
NO. OF CLASSROOMS	4	5	-1	PARENT-EDUCATOR										
JOB SATISF. RATING	1.8	1.8	0.1	IMAGE	0.07	0.25	-0.18	0.02	0.32	-0.30	0.231	-.75	.15	
BOOK RESOURCE SCALE	3.0	3.8	-0.8											
RACE (BLACK/NONBLACK)	0.7	1.0	-0.3	PROFESSION. ACCEPT										
IDENT. W. COMMUNITY	0.2	1.8	-1.6	OF METHOD	1.75	1.60	0.15	1.68	1.56	0.12	0.346	-.56	.80	
NO. OF HELPERS	1.0	0.8	0.2											
ABLE TO CHOOSE ASSIGNMENT	2.5	3.4	-0.9											
TRNG & TEACHER EXPER	4.5	4.4	0.1											

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 61

PROJECT DATA TABLE--HIGH/SCOPE PROJECT B, COHORT I, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	6	-2	OVERALL ACHIEVEMENT	114.9	140.3	-25.4	125.6	129.9	-4.3	4.67	-13.5	4.9
QUANT. PRESCORE	24.3	32.7	-8.4										
COG. PROCESS PRESCORE	6.6	7.8	-1.2	AFFECT	15.9	18.3	-2.4	16.8	18.6	-1.8	1.48	-4.7	1.1
READING PRESCORE	47.0	65.5	-18.5										
LANGUAGE PRESCORE	12.2	14.6	-2.4	ATTENDANCE	7.9	7.6	.3	6.2	8.6	-2.4	4.05	-10.3	5.5
AFFECT PRESCORE	16.0	18.4	-2.4										
AGE (JUNE '71)	94.7	97.2	-2.5	WRAT TOTAL	54.2	67.3	-13.1	60.6	62.5	-1.9	3.38	-8.5	4.7
% CLASSROOM MALE	52.5	58.1	-5.6										
% CLASSROOM BLACK	76.9	19.5	57.4	QUANTITATIVE	30.8	37.4	-6.6	33.0	35.3	-2.3	1.43	-5.1	.5
% PRESCHOOL (OR NO. MOS.)	87.8	24.2	63.6										
% PARENTS W/O HS DIPL.	60.1	31.8	28.3	COGNITIVE PROCESSES	8.3	9.3	-1.0	8.0	8.6	-.6	.53	-1.6	.4
% PARENTS W/SKILLED OCCUP.	25.9	65.0	-39.1										
% PARENTS BLACK	76.6	19.7	56.9	READING SKILLS	61.8	75.4	-13.6	69.7	70.0	-.3	3.71	-7.6	7.0
% PARENTS POVERTY ELIGIBLE	80.7	21.4	59.3										
% HEAD HOUSEHOLD EMPLOYED	88.9	94.2	-5.3	LANGUAGE ARTS	14.0	18.2	-4.2	14.8	16.1	-1.3	.98	-3.2	.6
% HEAD HOUSEHOLD MALE	83.8	91.7	-7.9										

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*See "Guide for Interpretation of Results" for explanation of table entries.

Project HS(a)

The evaluation data for project HS(a), also a CI-EF sample, are presented in Table 62 for the two-year effects, and in Table 63 for the one-year effects. This project is located in a rural community in the east south central portion of the United States. The project is moderate in size (450 pupils) and primarily Black in ethnic composition. It anticipated spending approximately $940 per pupil and had an average of one PAC member for each 32 pupils.

The four FT and the five NFT classes were reasonably comparable on baseline ability measures, but differed in classroom composition (NFT classes had proportionally more males and Blacks* and more preschool experience than FT classes). FT families differed from NFT families in only two respects. The FT heads of household were more likely to be male and currently working than were the NFT heads of households. It should be noted that both FT and NFT families were severely impoverished, with very few parents having high school educations or skilled occupations and nearly all families meeting the OEO poverty criteria. Data on teachers were inadequate for analysis.

Results of analyses of these second-year data display significant FT-favoring differences only on days absent (95 percent confidence interval = 3.2 to 19.2 days). But on the WRAT and reading outcomes, FT pupils showed significantly less gain than NFT pupils. Analysis of first-year results for these pupils (Table 63) indicate that the FT deficits are cumulative. For both first- and second-year measurements, the results favor NFT, and by the second year some of the differences become significant. However, the FT-favoring affect difference remains significant across both analyses, so apparently FT pupils have more positive attitudes and are learning the measured academic skills at a slower rate than NFT pupils in this project.

That this program had substantial impact on parents is evident from the analysis of parent data. The FT parents significantly differ from the NFT parents on the parent/child interaction scale, the parent/school involvement scale, and the parent expectation scale. These outcomes suggest that the model's emphasis on parental participation did succeed.

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*Table 63 shows FT classrooms sampled averaging 82 percent Black and the parent interview sample as 72 percent Black. Yet according to the sponsor, all participants at this site (both FT and NFT) were Black. This conflict reflects further on data reliability problems.

TABLE 62

PROJECT DATA TABLE--HIGH/SCOPE PROJECT A, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA			
VARIABLE	FT	NFT	DIFF
NO. OF CLASSROOMS	4	5	-1
AVERAGE PUPILS/CLASSROOM	11.5	12.2	-0.7
QUANT. PRESCORE	26.7	28.9	-2.2
COG. PROCESS PRESCORE	6.6	6.1	0.5
READING PRESCORE	55.2	59.2	-4.0
LANGUAGE PRESCORE	11.4	11.2	0.2
AFFECT PRESCORE	16.3	15.6	0.7
AGE (JUNE '71)	96.8	100.1	-3.3
% CLASSROOM MALE	38.6	60.2	-21.6
% CLASSROOM BLACK	81.8	100.0	-18.2
% PRESCHOOL (OR NO. MOS.)	25.0	49.2	-24.2
% PARENTS W/O HS DIPL.	92.1	91.0	1.1
% PARENTS W SKILLED OCCUP.	10.0	10.2	-0.2
% PARENTS BLACK	72.7	100.0	-27.3
% PARENTS POVERTY ELIGIBLE	85.9	92.8	-6.9
% HEAD HOUSEHOLD EMPLOYED	74.1	50.1	24.0
% HEAD HOUSEHOLD MALE	96.3	58.8	37.5
NO. CLASSROOM GROUPS	4	5	-1
AV. PARENTS/CLASSRM GRP	11.5	9.4	2.1
% W/O HIGH SCHOOL DIPLOMA	92.1	91.0	1.1
% W SKILLED OCCUP.	10.1	10.2	-0.2
% POS EVAL OF CHILD LRNG	83.3	82.0	1.3
% BLACK	72.7	100.0	-27.3
% REPORTING USE OF PRESCHOOL	0	49.2	-49.2
% POVERTY ELIGIBLE	85.9	92.8	-6.9
% HEAD HOUSEHOLD EMPLOYED	74.1	50.1	24.0
% HEAD HOUSEHOLD MALE	96.3	58.8	37.5

OUTCOME DATA				ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
PART I CHILD EVALUATION DATA									
OVERALL ACHIEVEMENT	124.0	141.4	-17.4	136.9	157.0	-20.1	12.26	-44.1	3.9
AFFECT	17.6	18.8	-1.2	18.7	19.8	-1.1	0.79	-2.6	.4
ATTENDANCE	7.3	14.8	-7.5	2.6	13.8	-11.2	4.06	-19.2	-3.2
WRAT TOTAL	90.8	100.4	-9.6	94.9	106.1	-11.2	5.27	-21.5	-.9
QUANTITATIVE	35.5	32.1	3.4	37.9	34.3	3.6	3.68	-3.6	10.8
READING SKILLS	66.7	85.7	-19.0	75.7	95.7	-20.0	8.13	-35.9	-4.1
LANGUAGE ARTS	21.5	22.4	-0.9	22.7	26.0	-3.3	2.44	-8.1	1.5
PART II PARENT EVALUATION DATA									
PARENT-CHILD INTERACT	.267	-.241	.508	.550	-.226	.776	.377	.04	1.51
PARENT-SCHOOL INVOLVE	.310	-.557	.867	.725	-.676	1.401	.384	.65	2.15
CHILD ACADEMIC EXPECT	.541	.428	.113	.961	.148	.813	.379	.07	1.56
SENSE OF CONTROL	.102	-.132	.234	-.276	-.406	.130	.369	-.59	.85

PROCESS DATA

PROJECT DESCRIPTORS

REGION	EAST SOUTH CENTRAL
DISTANCE TO NEAREST SMSA . .	50-70 MILES
SIZE OF NEAREST SMSA	190,000
PERCENT NONWHITE	58
PROJECT SIZE (PUPILS) . . .	450
NO. PUPILS/PAC MEMBER . . .	32.3
FT PER-PUPIL EXPENDITURE . .	940

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	-.67	-1.17
CHILD-INITIATED INTERACTIONS	-.64	.15
PROGRAMMED ACADEMIC . . .	.22	-.58
EXPRESSIVE	2.50	1.56
CHILD SELF-LEARNING . . .	-.96	-.49

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 63

PROJECT DATA TABLE--HIGH/SCOPE PROJECT A, COHORT I, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	5	-1	OVERALL ACHIEVEMENT	123.0	131.4	-8.4	129.3	136.2	-6.9	4.23	-15.2	1.4
QUANT. PRESCORE	26.7	28.9	-2.2										
COG. PROCESS PRESCORE	6.6	6.1	.5	AFFECT	17.8	15.1	2.7	17.2	13.4	3.8	1.34	1.2	6.4
READING PRESCORE	55.2	59.2	-4.0										
LANGUAGE PRESCORE	11.4	11.2	.2	ATTENDANCE	11.6	14.6	-3.0	14.3	15.9	-1.6	3.67	-8.8	5.6
AFFECT PRESCORE	16.3	15.6	.7										
AGE (JUNE '71)	96.8	100.1	-3.3	WRAT TOTAL	58.0	62.9	-4.9	59.7	64.9	-5.2	3.06	-11.2	.8
% CLASSROOM MALE	38.6	60.2	-21.6										
% CLASSROOM BLACK	81.8	100.0	-18.2	QUANTITATIVE	33.7	35.1	-1.6	35.7	36.7	-1.0	1.29	-3.5	1.5
% PRESCHOOL (OR NO. MOS.)	25.0	49.2	-24.2										
% PARENTS W/O HS DIPL.	92.1	91.0	1.1	COGNITIVE PROCESSES	8.3	8.3	0	9.5	9.0	.5	.48	-.4	1.4
% PARENTS W/SKILLED OCCUP.	9.9	10.1	-.2										
% PARENTS BLACK	72.7	100.0	-27.3	READING SKILLS	66.0	72.0	-6.0	67.5	73.0	-5.5	3.36	-12.1	1.1
% PARENTS POVERTY ELIGIBLE	85.9	92.8	-6.9										
% HEAD HOUSEHOLD EMPLOYED	74.1	50.1	24.0	LANGUAGE ARTS	15.2	15.7	-.5	16.4	17.5	-1.1	.89	-2.8	.6
% HEAD HOUSEHOLD MALE	96.3	58.5	37.5										

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

Factor score profiles obtained from classroom observation data suggest that the FT classrooms were not really all that different from the NFT classrooms. Only slight differences on most of the process components are noted. The FT classrooms can be best characterized by the expressiveness factor (as can NFT), and both appear low on the isolatory components (self-learning and self-regulatory). An identifiable salient process corresponding to this model is not evident in these data.*

Summary

The salient features of the cognitively oriented curriculum model are outlined as follows:

Focus and Objectives--emphasizes long range program objectives

Child

Cognitive (major emphasis)

Develop thinking skills
Develop competence in basic skills

Curricular Approach

Teacher's role that of facilitator
Reinforcement primarily from activities
Individual child's development is continuously assessed, and appropriate materials are provided
Group session (whole class situation) used to plan and revise daily activities; otherwise three adults work within open classroom framework

Type of Parent Involvement

Home visitors work with parents to plan child's activities at home.

Since the serious comparison group and data collection problems noted or suspected for two of the three samples lead to our recommendation that these samples not be included as evaluative evidence regarding the model's effects to date, our judgments and comments must be based on analysis of a single project.

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*Clear evidence that classroom processes in FT classrooms differ from those in NFT classrooms fails to occur in other High/Scope projects, as documented in the SRI FT Classroom Observation Study, 1972(b).

Data on this project indicate that the program has not yet produced evidence of positive impact on the development of competence in certain academic skills greater than that displayed by the NFT pupils. In fact, on the WRAT and reading measures, NFT pupils average significantly above FT. It is possible that the current evaluation variables are not appropriately sensitive to many of the cognitive behaviors that the model purports to develop. Also, since process factors showed high FT/NFT similarity, it may be that the model was not well implemented in the FT school. Nonetheless, the data show FT pupils are clearly behind NFT in the learning of certain basic skills as measured by the FT battery.

The parent results do indicate the model has been successful in developing parent/child interactions, more involvement in school, and more positive expectations for their children's success.

FLORIDA PARENT EDUCATION MODEL
University of Florida

Sponsor's Intended Approach

As the name of this model implies, its primary focus rests on educating parents to participate directly in the education of their children and motivating them to build a home environment that furthers better performance on the part of the child both in school and in life. Basic to the model is recognition of the fact that parents are a key factor in the emotional and intellectual growth of their children and that they are uniquely qualified to guide and participate in their children's education.

The Florida model is designed to work directly in the home. It is not classroom oriented in the traditional sense of having a preset curriculum or prescribed teaching strategies. It is developmental in its approach, changing classroom organization, teaching patterns, and the curriculum as needed to integrate learning activity in the school with that in the home. Learning tasks are developed that allow the home and the school to work as instructional partners. Thus, responsibility for curriculum development resides in the community, and the curriculum is the product of parent and school staff cooperation.

Paraprofessionals play an especially significant role in this model, working in the home and in the classroom. Mothers of project children are trained as both teacher auxiliaries and as educators of other parents and are assigned two to a classroom. They work half-time assisting the teacher and the rest of the time making home visits, demonstrating and teaching other mothers learning tasks developed to increase the child's intellectual competence and personal and social development. While in the home the parent educator also actively solicits ideas and information on which strategies are working from the parents.

In addition to her instructional role, the parent educator acts as liaison between the project overall and the home, serving as a referral agent for medical, dental, psychological, or social services. She informs the parents about Policy Advisory Committee meetings and other school/community functions in which they should become involved. Her experience with the children in the classroom setting as a teaching assistant enables her to keep individual parents up to date on their child's specific needs. This highly active role of the paraprofessional is crucial to the operation of the Florida model.

The teacher supervises the classroom activity of the parent educator and assists her in planning and carrying out her assignments in the home. Conversely, the teacher modifies her own activity on the basis of knowledge obtained from the parent educator's reports on the home. Parents are invited into the classroom not as passive observers but to participate actively in the instruction. Through such persistent contact the teacher learns and grows along with the parent and obtains a sound basis from which to guide preparation of learning tasks.

Recognizing the role of the Policy Advisory Committee is basic to the program, each school develops a "mini-PAC" that participates in the activity of the larger Follow Through PAC. The larger PAC group is involved in staff selection, budgets, working with project professionals on development of home learning tasks, and in strengthening all components of the program.

Both preservice and inservice training are provided by the sponsor in implementing the model. A workshop at the University of Florida trains a cadre of teachers and parent educators along with such other key personnel as Follow Through representatives, principals, and PAC chairmen. People attending this workshop, in turn, conduct workshops at the project site. Video tapes made in the classroom and in the home guide the sponsor in addressing problems pertinent to model implementation and development. Projects also provide the sponsor with copies of their home-learning tasks, weekly observation reports, and replies to attitude questionnaires. All such information is collected subject to review and approval by the PAC. The flow of information among the sponsor, the local education agency, and the parent community reflects the team partnership emphasis of the model and gives the education of individual children its direction and shape.

Individual Project Results

Six samples from three different projects sponsored by the University of Florida (UF) were included in the analysis of interim effects. The distribution of these evaluation samples in terms of cohort, outcome, and project is as follows:

Cohort	First-year Effects	Second-year Effects
IK	(project c)	(projects a&c)
IEF		(project b)
IIK	(project a)	
IIEF	(project b)	

Project UF(a)

This project is located in a south Atlantic city of approximately 500,000 residents, nearly one fourth of whom are Black. The project anticipated an above average per-pupil expenditure of $1,023 and had a very high PAC participation of one member for each 5.5 pupils. Two sets of data are examined below--second-year outcomes for Cohort I and first-year outcomes for Cohort II.

Cohort I data are presented in Table 64. Baseline data indicate that children in the four FT and ten NFT classrooms included in the analysis scored fairly comparably on tests taken as they entered school. Although more of the FT children had attended preschool, a substantial percentage of NFT children (56 percent) also had preschool experience.

All FT children were Black, and rosters indicate that 28 percent of the NFT pupils were non-Black. However, this information is inconsistent with the data on families obtained by interview. All of the parents interviewed, both FT and NFT, were Black. FT parents were more likely to be high school educated and slightly more likely to have a skilled occupation and to be employed. They are also described as slightly more likely to meet poverty eligibility requirements, which is somewhat inconsistent with the general trends in these interim data.

Teacher data show that both FT and NFT teachers were fairly well trained, with FT teachers having more experience than NFT. Although NFT teachers reported slightly higher job satisfaction, most of them had apparently been assigned to the school and classroom in which they taught. FT teachers, on the other hand, indicated a fairly high level of freedom to choose teaching assignments. Although NFT teachers reported more book resources, they did not report more classroom helpers.

Child outcomes on both overall cognitive measures (WRAT total and overall achievement) show that NFT children improved significantly more than FT children. Among the cognitive skills, the only significant difference was in language arts; again NFT pupils showed more improvement.

TABLE 64

PROJECT DATA TABLE--UNIVERSITY OF FLORIDA PROJECT A, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	10	-6	OVERALL ACHIEVEMENT	118.8	126.9	-8.1	126.2	142.2	-16.0	8.13	-31.9	-.1
AVERAGE PUPILS/CLASSROOM	13.5	--	--										
QUANT. PRESCORE	15.9	14.7	1.2	AFFECT	17.7	17.6	0.1	18.3	18.1	0.2	0.86	-1.5	1.9
COG. PROCESS PRESCORE	4.6	5.6	-1.0										
READING PRESCORE	25.0	21.8	3.2	ATTENDANCE	11.8	26.0	-14.2	12.7	27.9	-15.2	2.66	-20.4	-10.0
LANGUAGE PRESCORE	10.1	9.9	0.2										
AFFECT PRESCORE	14.2	14.5	-0.3	WRAT TOTAL	68.9	75.0	-6.1	71.3	80.7	-9.4	4.39	-18.0	-.8
AGE (JUNE '71)	83.1	84.2	-1.1										
% CLASSROOM MALE	39.5	45.4	-5.9	QUANTITATIVE	37.4	39.1	-1.7	40.0	43.5	-3.5	2.61	-8.6	1.6
% CLASSROOM BLACK	100.0	72.4	27.6										
% PRESCHOOL (OR NO. MOS.)	68.1	56.2	11.9	COGNITIVE PROCESSES	7.5	7.0	0.5	7.9	8.0	-0.1	0.49	-1.1	.9
% PARENTS W/O HS DIPL.	51.5	73.4	-21.9										
% PARENTS W SKILLED OCCUP.	28.4	25.6	2.8	READING SKILLS	50.0	54.3	-4.3	52.4	59.8	-7.4	4.03	-15.3	.5
% PARENTS BLACK	100.0	100.0	0										
% PARENTS POVERTY ELIGIBLE	88.5	80.0	8.5	LANGUAGE ARTS	23.8	26.4	-2.6	25.9	30.6	-4.7	2.24	-9.1	-.3
% HEAD HOUSEHOLD EMPLOYED	83.7	71.0	12.7										
% HEAD HOUSEHOLD MALE	63.9	79.1	-15.2										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	4	7	-3	PARENT-CHILD --									
AV. PARENTS/CLASSRM GRP	12.2	3.7	8.5	INTERACT	-.135	-.061	-.074	-.227	-.108	-.119	.267	-.64	.40
% W/O HIGH SCHOOL DIPLOMA	51.5	69.5	-18.0										
% W SKILLED OCCUP.	28.4	29.2	-0.8	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	95.2	100.0	-4.8	INVOLVE	.364	.333	.030	.233	.169	.084	.362	-.63	.70
% BLACK	100.0	100.0	0										
% REPORTING USE OF PRESCHOOL	57.5	56.8	0.7	CHILD ACADEMIC									
% POVERTY ELIGIBLE	88.5	77.1	11.4	EXPECT	.474	.284	.190	.367	.223	.144	.375	-.39	.88
% HEAD HOUSEHOLD EMPLOYED	83.7	66.8	16.9										
% HEAD HOUSEHOLD MALE	63.9	76.1	-12.2	SENSE OF CONTROL	.062	-.090	.152	-.150	-.296	.146	.355	-.55	.84
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	2	8	-6	PARENT-EDUCATOR									
JOB SATISF. RATING	1.5	2.0	-0.5	IMAGE	0.50	0.57	-0.07	0.34	0.68	-0.34	0.227	-.78	.10
BOOK RESOURCE SCALE	3.0	4.0	-1.0										
RACE (BLACK/NONBLACK)	0	0.5	-0.5	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	1.0	0.5	0.5	OF METHOD	2.00	1.50	0.50	2.02	1.26	0.76	0.317	.14	1.38
NO. OF HELPERS	2.0	0	2.0										
ABLE TO CHOOSE ASSIGNMENT	2.5	0.5	2.0										
TRNG & TEACHER EXPER	7.0	4.7	2.3										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	530,000
PERCENT NONWHITE	23
PROJECT SIZE (PUPILS) . . .	260
NO. PUPILS/PAC MEMBER . . .	5.6
FT PER-PUPIL EXPENDITURE . .	1,023

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	-1.47	-1.58
CHILD-INITIATED INTERACTIONS	-.41	-.61
PROGRAMMED ACADEMIC . .	-.85	-.31
EXPRESSIVE	-.18	-1.06
CHILD SELF-LEARNING . .	-.49	-.53

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*See "Guide for Interpretation of Results" for explanation of table entries.

Although the slightly higher FT scores on affect measures do not reach significance, the attendance measure favors FT significantly (95 percent confidence interval of -20.4 to -10.0, with negative scores indicating lower absence rates).

Classroom observations of FT and NFT classrooms in Project UF(a) with Cohort I pupils in their second year of school (first graders) showed that the two sets of classrooms were similar in many respects. For example, both FT and NFT classrooms were low (relative to all classrooms observed) and similar to one another on the self-regulatory factor. They were also somewhat below overall averages and similar to one another on the child-initiated interaction and the child self-learning factors. Their greatest relative differences were on the programmed academic and the expressive factors. On both these factors, FT and NFT classrooms were below the overall means for all classrooms observed. However, the relative differences between FT and NFT groups were substantial; the NFT group was relatively higher on the programmed academic factor, and the FT group was relatively higher on the expressive factor. This difference in emphasis may help account for NFT superiority on the achievement measures and FT superiority (or equality) on the attendance and attitude measures.

The model had some positive impact on the FT teachers. They reported a significantly higher acceptance of FT and its innovations than NFT teachers reported of their methods. But on the parent image variable FT and NFT did not differ significantly. Since the University of Florida employs parents as paraprofessional home-school coordinators, it is possible that teachers felt it was not essential for them to contact parents personally outside of the classroom. However, the complexity of the parent image variable does not exclude alternative interpretations.

Data for Cohort II are presented in Table 65. Pupil data are based on three FT classrooms and two NFT classrooms. FT and NFT children appear to have been comparable in ethnicity (all are Black) and education of their parents (64 percent without high school diplomas). However, more of the FT children are male (58.6 percent, compared with only 39.7 percent of the NFT children), a higher percentage of FT children came from homes meeting poverty criteria and in which the head of household was not employed.

[illegible]

[illegible]

[illegible]	FT	NFT	DIFF	[illegible]	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
PART I [illegible]													
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]										
PART II [illegible]													
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]									
% POS EVAL OF CHILD LRNG	90.2	88.6	1.6	INVOLVE	.099	-.161	.260	.569	.217	.352	.390	-.41	1.12
% BLACK	100.0	98.2	1.8										
% REPORTING USE OF PRESCHOOL	100.0	100.0	0	CHILD ACADEMIC									
% POVERTY ELIGIBLE	83.0	69.1	13.9	EXPECT	.353	.197	.156	1.30	-.063	.193	.293	-.38	.77
% HEAD HOUSEHOLD EMPLOYED	60.9	75.7	-14.8										
% HEAD HOUSEHOLD MALE	52.3	59.1	-6.8	SENSE OF CONTROL	.228	-117	.345	.088	-.291	.379	.416	-.44	1.19
PART III TEACHER EVALUATION DATA													
NO. OF CLASSROOMS	2	2	0	PARENT-EDUCATOR									
JOB SATISF. RATING	1.9	1.8	0.1	IMAGE	0.14	0.21	-0.07	-0.30	0.08	-0.38	0.22	-.81	.05
BOOK RESOURCE SCALE	1.5	2.0	-0.5										
RACE (BLACK/NONBLACK)	0.5	0.5	0	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	1.0	1.0	0	OF METHOD	1.50	2.00	-0.50	1.73	1.84	-0.11	0.69	-1.46	1.24
NO. OF HELPERS	2.0	1.0	1.0										
ABLE TO CHOOSE ASSIGNMENT	0	1.0	-1.0										
TRNG & TEACHER EXPER	5.5	3.5	2.0										

[illegible]

[illegible]

[illegible]	FT	NFT
[illegible]	[illegible]	[illegible]
CHILD-INITIATED INTERACTIONS	-.54	-.75
PROGRAMMED ACADEMIC	-.84	-1.74
EXPRESSIVE	.04	-.86
CHILD SELF-LEARNING	-.75	-.43

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*See "Guide for Interpretation of Results" for explanation of table entries.

Nevertheless, FT and NFT scores on baseline tests are relatively comparable, except on reading, where the FT children are two points behind the NFT children.*

Teacher covariable data indicate that FT and NFT teachers were comparable in terms of job satisfaction and community membership. Whereas Cohort II, FT teachers were more experienced than NFT teachers, both groups had somewhat less experience than did teachers in the Cohort I sample. Also, Cohort I, FT teachers reported a fair amount of freedom to choose the school and classroom in which they worked, while Cohort II, FT teachers were apparently assigned, and NFT teachers chose their assignments.

Outcome data for the children in Cohort II are favorable to the model. FT children score above NFT children (at a 95 percent level of confidence) on all achievement outcomes except cognitive processes, where the difference favors FT but does not reach significance. These FT-favoring differences represent a sharp contrast to the effects observed for Cohort I. Indeed, comparison of Cohort I to Cohort II results strongly suggests an improved implementation effect.

That is, although outcome measures for parents all fail to display significant differences, the parent data show a small but consistent tendency to favor FT. FT teachers, on the other hand, responded essentially no differently than NFT teachers regarding parent image and acceptability of method, and given the parent role emphasis of this model, the Project UF(a) pupil results seem to indicate that the effectiveness of this involvement is improving with successive samples of parents and pupils.

Classroom observation data for Cohort II indicate that the FT classes were below the overall average (as were the NFT classes) in the scaled process dimensions. The FT classes can be characterized as more expressive and less structured than NFT. This pattern is not inconsistent with the emphasis of the model that parents should facilitate the classroom process and assume more of a direct role as the principal educators of their children.

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*Data on the preschool experience of NFT children in this cohort present a problem. Data from rosters indicate that NFT children did not have preschool experience, while data collected from parents indicate that they did. In this case, the latter set of data is more likely correct, since rostering problems were encountered for this set of pupils. Thus, the child covariable data are slightly biased in favor of NFT outcomes. But since the observed differences are, in general, large and in favor of FT, the probability that the interpretation would change because of this bias is considered remote.

Project UF(c)

This project is located within a large city in the middle Atlantic region. Slightly more than one third of the 4 million residents are non-white. The anticipated per pupil expenditure was $826, and the pupil/PAC ratio was 6.8, which suggests above-average parent involvement on the PAC.

Baseline data describing second-year effects on children in the five FT and four NFT, Cohort I-K classrooms (Table 66) included in the analysis consistently show FT children with higher scores, in some cases substantially higher, than the comparison group. Although the two groups were similar in ethnic composition (almost totally Black) and had approximately the same employment rate for heads of household (about 50 percent), the parents differ considerably in terms of percentage with high school education and skilled occupation. FT children scored consistently higher on pretests with the largest differences (8.6 points) occurring on the reading measure.

FT classes averaged higher on all pupil outcomes than NFT classes, but none of these differences is significant.

One-year data for Cohort I children are presented in Table 67. As was the case for the second-year data, none of the child outcome measures reached significance at a 95 percent level of confidence. However comparison of differences between the first- and second-year results shows a trend toward increasingly positive impacts on FT children.

None of the parent outcomes reached significance, but the high degree of parent participation in the PAC group is encouraging.

It is interesting that FT and NFT teachers display similar job satisfaction ratings, since NFT teachers have a great many resources available to them and more freedom to choose assignments than FT teachers.

The ethnic difference between NFT teachers and their students is especially interesting in view of the teachers' evaluations of the importance of parents to education. NFT teachers viewed parents as being an integral part of the educational system outside of school time more frequently than did FT teachers.

TABLE 60

PROJECT DATA TABLE—UNIVERSITY OF FLORIDA PROJECT C, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						PROCESS DATA		
												CONFIDENCE INTERVAL				
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH			
				PART I CHILD EVALUATION DATA												
NO. OF CLASSROOMS	5	4	1	OVERALL ACHIEVEMENT	131.7	110.7	21.0	133.6	126.4	7.2	8.80	-10.3	24.6	PROJECT DESCRIPTORS		
AVERAGE PUPILS/CLASSROOM	11.6	8.3	3.3												MIDDLE	
QUANT. PRESCORE	18.7	15.7	3.0	AFFECT	19.5	18.0	1.5	17.6	17.2	0.4	0.84	-1.4	2.2	REGION	ATLANTIC	
COG. PROCESS PRESCORE	4.0	3.2	0.8													
READING PRESCORE	21.0	22.2	-1.2	ATTENDANCE	18.4	19.0	-0.6	18.7	19.9	-1.2	2.01	-4.9	4.5	DISTANCE TO NEAREST SMSA . .	WITHIN	
LANGUAGE PRESCORE	8.3	7.6	0.8													
AFFECT PRESCORE	16.7	14.5	2.2	GRAD TOTAL	74.5	68.1	6.4	78.6	72.1	6.5	6.05	-5.3	18.3	SIZE OF NEAREST SMSA	6,321,000	
AGE (JUNE '71)	82.8	84.8	-2.0													
% CLASSROOM MALE	47.5	60.4	-12.9	QUANTITATIVE	28.9	26.5	2.4	42.5	41.9	0.6	2.88	-5.0	6.2	PERCENT NONWHITE	24	
% CLASSROOM BLACK	94.6	89.5	5.1													
% PRESCHOOL (OR EQ. EXP.)	62.5	39.8	22.7	COGNITIVE PROCESSES	7.2	6.4	0.8	7.4	6.9	0.5	0.32	-.1	1.1	PROJECT SIZE (PUPILS) . . .	300	
% PARENTS H/S OR DIPL.	38.1	72.0	-33.9													
% PARENTS W SKILLED OCCUP.	35.0	7.2	27.8	READING SKILLS	22.6	14.8	7.8	55.8	51.1	4.7	4.41	-3.9	13.3	NO. PUPILS/PAC MEMBER . . .	6.9	
% PARENTS BLACK	94.9	87.5	7.4													
% PARENTS POVERTY ELIGIBLE	80.7	80.7	0	LANGUAGE ARTS	28.0	22.9	5.1	27.6	26.3	1.3	2.46	-3.5	6.1	FT PER-PUPIL EXPENDITURE . .	609	
% HEAD HOUSEHOLD EMPLOYED	50.3	48.4	1.9													
% HEAD HOUSEHOLD MALE	52.6	60.7	-8.1													
				PART II PARENT EVALUATION DATA										CLASSROOM OBSERVATION FACTOR SCORES		
NO. CLASSROOM GROUPS	3	3	2	PARENT-CHILD										FACTOR NAME	FT	NFT
AV. PARENTS/CLASSRM GRP	10.8	3.3	7.5	INTERACT	.484	-.203	.689	.487	-.200	.687	.214	.26	1.10	SELF REGULATORY	-.72	-4.35
% H/S HIGH SCHOOL DIPLOMA	38.1	72.0	-33.9													
% W SKILLED OCCUP.	35.0	7.2	27.8	PARENT-SCHOOL										CHILD-INITIATED		
% PER GOAL OF CHILD LERN	88.9	100.0	-11.1	INVOLVE	.710	-.088	.798	.333	-.088	.345	.420	-.28	1.24	INTERACTIONS	-.83	-1.69
% BLACK	94.9	87.5	7.4	CHILD ACADEMIC												
% REPORTING USE OF PRESCHOOL	62.5	24.1	38.4	EXPECT	-.500	.272	-.002	.057	.117	-.060	.440	-.93	.77	PROGRAMMED ACADEMIC	-.38	.13
% POVERTY ELIGIBLE	80.7	80.7	0													
% HEAD HOUSEHOLD EMPLOYED	50.3	48.4	1.9											EXPRESSIVE	-.20	-.11
% HEAD HOUSEHOLD MALE	52.6	60.7	-8.1	SENSE OF CONTROL	-.112	-.058	-.054	-.280	-.181	-.099	.416	-.90	.72			
				PART III TEACHER EVALUATION DATA										CHILD SELF-LEARNING	1.23	-.20
NO. OF CLASSROOMS	3	4	1	PARENT-EDUCATOR												
JOB SATISF. RATING	1.8	1.8	0.2	ROLE	0.21	1.00	-0.79	0.33	0.84	-0.70	0.384	-1.37	-.02			
WORK RESOURCE SCALE	3.0	3.0	-0.0													
RATE (BLACK/NONBLACK)	1.0	0	1.0	PROFESSIONAL SATISF.												
CONST. W. COMMUNITY	1.0	0	1.0	OF METHOD	1.50	1.80	-0.30	1.12	1.48	-0.36	0.272	-.89	.17			
NO. OF HELPERS	2.0	1.5	0.5													
ABLE TO CHOOSE ASSIGNMENT	1.0	2.2	-1.2													
TIME W TRAINING STAFF	4.5	5.0	-0.5													

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 67

PROJECT DATA TABLE--UNIVERSITY OF FLORIDA PROJECT C, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	4	1	OVERALL ACHIEVEMENT	88.7	82.1	6.6	91.7	95.6	-3.9	6.17	-16.0	11.7
QUANT. PRESCORE	18.7	15.7	3										
COG. PROCESS PRESCORE	4.0	3.2	.8	AFFECT	16.8	16.6	.2	17.2	17.6	-.4	1.40	-3.1	2.3
READING PRESCORE	31.8	23.2	8.6										
LANGUAGE PRESCORE	8.5	7.6	.9	ATTENDANCE	20.7	19.5	1.2	17.4	13.6	3.8	4.08	-4.2	11.8
AFFECT PRESCORE	16.7	14.5	2.2										
AGE (JUNE '71)	82.8	84.6	-1.8	WRAT TOTAL	38.5	38.6	-.1	39.3	43.9	-4.6	3.51	-11.5	2.3
% CLASSROOM MALE	47.5	60.5	-13.0										
% CLASSROOM BLACK	94.6	89.5	5.1	QUANTITATIVE	26.9	22.7	4.2	27.7	26.2	1.5	1.79	-2.0	5.0
% PRESCHOOL (OR NO. MOS.)	62.5	28.8	33.7										
% PARENTS W/O HS DIPL.	58.1	75	-16.9	COGNITIVE PROCESSES	6.5	5.6	.9	7.1	6.7	.4	.59	-.8	1.6
% PARENTS W/SKILLED OCCUP.	35	7.1	27.9										
% PARENTS BLACK	94.9	87.5	7.4	READING SKILLS	43.6	43.2	.4	45.1	50.7	-5.6	4.21	-13.9	2.7
% PARENTS POVERTY ELIGIBLE	60.7	60.7	0										
% HEAD HOUSEHOLD EMPLOYED	50.3	46.4	3.9	LANGUAGE ARTS	11.7	10.0	1.7	12.1	11.8	.3	.91	-1.5	2.1
% HEAD HOUSEHOLD MALE	52.6	60.7	-8.1										

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*See "Guide for Interpretation of Results" for explanation of table entries.

The process profiles obtained through classroom observation for FT and NFT pupils Cohort I in Project UF(c) were fairly similar. Both showed low scores (relative to the overall average) on the child-initiated interaction and the self-regulatory factors and both were moderatley low on the expressive factor. FT and NFT classes were most different on the child self-learning and the programmed academic factors. On the child self-learning factor, FT classes were very much higher than NFT classes and substantially above the mean for all classrooms. On the programmed academic factor, FT classes were lower than NFT classes although neither deviated radically from the overall average.

These pattern differences in process may have been related to the favorable differences on achievement, affect, and attendance outcome measures, although the magnitude of these outcome differences is not statistically significant.

Project UF(b)

This project, located in the west south central region, is far from the nearest SMSA, which is of moderate size (664,000). The community's population is only 6 percent Black. The proportion of Black children in the two FT samples was about 15 percent. This project anticipated a very low per-pupil expenditure of $516. Data on this entering first grade project are available for second-year effects on Cohort I and first-year effects on Cohort II.

Data on Cohort I are summarized in Table 68. Baseline data show that the six FT and three NFT classrooms were moderately comparable on the prescore measures, although FT children tended to average below NFT children. The families are also moderately comparable, although again FT families appear more disadvantaged than NFT families on all demographic indicators (education, occupation, income, etc.). The high employment rates displayed by both samples suggests farm-worker families in the rural south.

Analyses of the pupil outcome variables failed to reveal any significant two-year FT impacts for this project. Analysis of parent outcomes, however, showed a significant FT-favoring difference on the parent-school involvement variable. This outcome is compatible with the model's major emphasis on parental involvement in the education of their children.

Teacher data for this sample show FT teachers as somewhat more satisfied with their working conditions and more likely to have classroom helpers than NFT teachers. On the other hand, NFT teachers reported more book

TABLE 88

PROJECT DATA TABLE--UNIVERSITY OF FLORIDA PROJECT B, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	6	3	3	OVERALL ACHIEVEMENT	164.3	167.6	-3.3	151.1	139.8	11.3	10.70	-9.7	32.3
AVERAGE PUPILS/CLASSROOM	16.7	19.0	-2.3										
QUANT. PRESCORE	30.3	32.0	-1.7	AFFECT	18.2	18.8	-0.6	18.1	18.8	-0.7	0.69	-2.1	.7
COG. PROCESS PRESCORE	7.4	7.5	-0.1										
READING PRESCORE	59.9	64.9	-5.0	ATTENDANCE	5.6	12.0	-6.4	6.6	13.1	-6.5	3.54	-13.4	.4
LANGUAGE PRESCORE	14.1	13.8	0.3										
AFFECT PRESCORE	17.1	17.8	-0.7	WRAT TOTAL	106.2	107.3	-1.1	101.1	96.9	4.2	4.60	-4.8	13.2
AGE (JUNE '71)	99.1	99.9	-0.8										
% CLASSROOM MALE	52.8	51.3	1.5	QUANTITATIVE	47.0	46.9	0.1	44.3	41.5	2.8	3.22	-3.5	9.1
% CLASSROOM BLACK	17.7	3.5	14.2										
% PRESCHOOL (OR NO. MOS.)	43.4	39.9	3.5	READING SKILLS	88.6	91.4	-2.8	80.2	73.7	6.5	7.10	-7.4	20.4
% PARENTS W/O HS DIPL.	64.5	48.5	16.0										
% PARENTS W SKILLED OCCUP.	48.8	57.6	-8.8	LANGUAGE ARTS	28.7	29.4	-0.7	26.5	24.4	2.1	2.13	-2.1	6.3
% PARENTS BLACK	15.0	4.4	10.6										
% PARENTS POVERTY ELIGIBLE	40.1	16.9	23.2										
% HEAD HOUSEHOLD EMPLOYED	89.9	93.3	-3.4										
% HEAD HOUSEHOLD MALE	90.5	95.8	-5.3										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	6	3	3	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	10.8	15.7	-4.9	INTERACT	.264	.663	-.399	.247	.488	-.241	.323	-.87	.39
% W/O HIGH SCHOOL DIPLOMA	64.5	48.5	16.0										
% W SKILLED OCCUP.	48.8	57.6	-8.8	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	79.3	84.7	-5.4	INVOLVE	1.000	.262	.738	1.205	.445	.760	.329	.12	1.40
% BLACK	15.0	4.4	10.6										
% REPORTING USE OF PRESCHOOL	43.4	39.9	3.5	CHILD ACADEMIC									
% POVERTY ELIGIBLE	40.1	16.9	23.2	EXPECT	-.025	.176	-.201	.036	.079	-.115	.325	-.75	.52
% HEAD HOUSEHOLD EMPLOYED	89.9	93.3	-3.4										
% HEAD HOUSEHOLD MALE	90.5	95.8	-5.3	SENSE OF CONTROL	.278	.551	-.273	.252	.593	-.341	.316	-.96	.28
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	4	2	2	PARENT-EDUCATOR									
JOB SATISF. RATING	1.9	1.5	0.3	IMAGE	0.21	0.50	-0.29	0.18	0.73	-0.55	0.314	-1.17	.07
BOOK RESOURCE SCALE	4.2	4.5	-0.3										
RACE (BLACK/NONBLACK)	1.0	1.0	0	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	0.7	1.5	-0.8	OF METHOD	1.50	1.50	0	1.75	1.13	0.62	0.471	-.30	1.54
NO. OF HELPERS	1.7	0	1.7										
ABLE TO CHOOSE ASSIGNMENT	2.0	4.0	-2.0										
TRNG & TEACHER EXPER	1.7	6.5	-4.7										

PROCESS DATA	
PROJECT DESCRIPTORS	
REGION	WEST SOUTH CENTRAL
DISTANCE TO NEAREST SMSA . .	50-70 MILES
SIZE OF NEAREST SMSA	664,000
PERCENT NONWHITE	6
PROJECT SIZE (PUPILS). . . .	455
NO. PUPILS/PAC MEMBER . . .	14.7
FT PER-PUPIL EXPENDITURE . .	516

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

resources, were more closely tied to the neighborhoods of their pupils, were freer to choose assignments, and appeared far more experienced than FT teachers. Analysis of teacher outcomes in terms of these differences failed to reveal significant FT/NFT differences. However, the magnitude and nature of this overall pattern of differences certainly suggested substantial lack of comparability between these two samples.

Covariable data on families for Cohort II children (see Table 69) display the same tendencies as the data for Cohort I, although the FT/NFT differences are more pronounced for Cohort II in every case. FT families in Cohort II were less well educated, less well employed, and more often classified as poverty eligible than both their NFT comparison and their Cohort I, FT counterparts. FT and NFT pupils had had similar preschool experience. The NFT group scored slightly higher on all baseline test measures except reading. The two groups also lacked comparability in classroom composition, the FT class containing slightly more girls than boys, while the NFT group was almost all male.

Like the Cohort II data for Project UF(a), child outcome data significantly and consistently favor FT over NFT. These gains are indeed impressive, since they are reflected on overall cognitive outcomes (achievement and WRAT), specific skills (reading, language, and quantitative skills), and affect measures.

Covariable teacher data indicate that the FT teachers in Cohort II classrooms were considerably more experienced than those in Cohort I classrooms; they were also more experienced than the NFT teachers with whom they were compared. They identified somewhat more strongly with the community and reported slightly higher book resources and more classroom helpers than NFT teachers. Perhaps partly because of the presence of additional resources and helpers, FT teachers indicated greater job satisfaction. Although the adjusted outcomes still favor the FT group, neither is significant.

Data on parent impacts were not available for this cohort.

TABLE 69

PROJECT DATA TABLE--UNIVERSITY OF FLORIDA PROJECT B, COHORT II, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1970-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						
												CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
						PART I CHILD EVALUATION DATA								
NO. OF CLASSROOMS	4	3	1	OVERALL ACHIEVEMENT	141.1	128.8	12.3	113.4	87.5	25.9	11.93	2.5	49.3	PROJECT DESCRIPTORS
AVERAGE PUPILS/CL'SSROOM	14.0	6.0	8.0											
QUANT. PRESCORE	35.4	36.7	-1.3	AFFECT	18.3	18.6	-0.3	17.4	15.4	2.0	0.71	.6	3.4	REGION . . . . WEST SOUTH CENTRAL
COG. PROCESS PRESCORE	9.0	9.2	-0.2											
READING PRESCORE	51.6	48.8	2.8	ATTENDANCE	6.0	4.2	1.8	5.0	2.6	2.4	4.27	-6.0	10.8	DISTANCE TO NEAREST SMSA . . 50-70 MILES
LANGUAGE PRESCORE	15.9	16.6	-0.7											
AFFECT PRESCORE	16.7	17.9	-1.2	WRAT TOTAL	83.5	78.0	5.5	50.5	33.5	17.0	7.49	2.3	31.7	SIZE OF NEAREST SMSA 664,000
AGE (JUNE '71)	85.6	88.6	-3.0											
% CLASSROOM MALE	39.4	87.5	-48.1	QUANTITATIVE	51.9	46.2	5.7	43.0	31.1	11.9	5.08	1.9	21.9	PERCENT NONWHITE 6
% CLASSROOM BLACK	17.5	0	17.5											
% PRESCHOOL (OR NO. MOS.)	8.8	8.5	0.3	COGNITIVE PROCESSES	10.4	10.0	0.4	10.1	9.4	0.7	1.89	-3.0	4.4	PROJECT SIZE (PUPILS). . . . 455
% PARENTS W/O HS DIPL.	64.5	40.0	24.5											
% PARENTS W SKILLED OCCUP.	43.1	70.0	-26.9	READING SKILLS	78.9	72.7	6.2	60.2	46.9	13.3	6.64	.3	26.3	NO. PUPILS/PAC MEMBER . . . 14.7
% PARENTS BLACK	23.8	0	23.8											
% PARENTS POVERTY ELIGIBLE	49.2	20.0	29.2	LANGUAGE ARTS	26.4	23.8	2.6	21.2	15.9	5.3	2.62	.2	10.4	FT PER-PUPIL EXPENDITURE . . 516
% HEAD HOUSEHOLD EMPLOYED	87.7	100.0	-12.3											
% HEAD HOUSEHOLD MALE	77.9	100.0	-22.1											CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT
						PART III TEACHER EVALUATION DATA								
NO. OF CLASSROOMS	4	3	1											
JOB SATISF. RATING	2.0	1.3	0.7	PARENT-EDUCATOR IMAGE	0.56	0.14	0.42	0.76	0.47	0.29	0.398	-.49	1.07	
BOOK RESOURCE SCALE	3.7	3.0	0.7											
RACE (BLACK/NONBLACK)	1.0	1.0	0											
IDENT. W. COMMUNITY	1.5	0.7	0.8	PROFESSION. ACCEPT OF METHOD	1.76	1.33	0.42	1.58	1.47	0.11	0.432	-.74	.96	
NO. OF HELPERS	2.5	0	2.5											
ABLE TO CHOOSE ASSIGNMENT	2.2	2.3	-0.1											
TRNG & TEACHER EXPER	5.4	3.4	2.0											

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*See "Guide for Interpretation of Results" for explanation of table entries.

Summary

The salient features of the University of Florida approach can be summarized as follows:

Focus and Objectives--emphasizes long range objectives

Parent
- To educate parents for direct participation in the education of their children
- To motivate parents to build a home environment conducive to learning

Child
- Increase intellectual competence
- Promote personal and social development

Curricular Approach
- Parent educators divide time between assisting teacher in classroom and making home visits to demonstrate learning tasks to parents
- Parents also participate actively in the classroom quite often

Type of Parent Involvement
- Direct both at home and at school.

The primary concern of this model is to increase the amount of parental involvement in the educational process. The goal is to accomplish this by educating parents for direct participation in the education of their children and by motivating parents to build a home environment conducive to learning.

In summarizing the results of the interim analyses, it appears that the Florida approach has met with mixed one and two year success on Cohort I project samples. The sponsor level analysis (Table 70) on Cohort I-K projects fails to reveal any significant overall parent or pupil impacts. This absence of results, particularly for parent/school involvement, is possibly due to implementation problems associated with these samples or, equally likely, to data problems. That is, as has been noted for other approaches, Cohort I data often yield conflicting results.

The analyses of teacher and parent outcome variables generally show greater acceptance of Follow Through by FT teachers and greater parental involvement for FT parents. This pattern is interpreted as positive evidence of attainment of some basic objective of this model. The overall finding (see Table 70) that Cohort I FT teachers held a significantly less positive parent educator image may, in part, reflect implementation difficulties. An alternative explanation may lie within the mechanics of the Florida model itself, making this finding wholly acceptable, if not anticipated. Specifically, in this model contacts with the parents are generally initiated by the classroom paraprofessionals (parent educators) rather than by the teachers. The finding that NFT teachers consider contacts with parents outside the classroom more essential than do FT teachers may, then, be explained by the Florida's model's delegation of this responsibility to the parent educator.

In general, the Cohort II samples produce much stronger and more promising evidence of the efficacy of the Florida approach. Since Cohort II samples contain far fewer data problems, and since improved outcomes may reflect improved implementation of the model, we feel that these latter data should be stressed.

TABLE 70

UNIVERSITY OF FLORIDA SUMMARY, COHORT I, KINDERGARTEN ENTERING PROJECTS: TWO-YEAR EFFECTS, 1969-1971

OUTCOME MEASURE	UNADJUSTED MEANS			ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	122.6	122.3	.4	123.4	128.4	-5.0	6.51	-17.8	7.8
AFFECT	18.0	17.4	.7	17.3	16.6	.7	.63	-.5	1.9
WRAT	72.0	72.5	-.4	72.6	75.3	-2.8	3.63	-9.9	4.3
QUANTITATIVE	38.8	38.4	.4	39.7	40.6	-.9	2.08	-5.0	3.2
COG. PROCESS	7.3	6.8	.5	7.3	7.1	.2	.37	-.5	.9
READING	51.5	51.6	-.1	51.1	52.9	-1.8	3.27	-8.2	4.6
LANGUAGE	25.0	25.4	-.4	25.0	27.3	-2.3	1.75	-5.7	1.1
PARENT DATA									
PARENT-CHILD	-.01	-.15	.14	.0	.08	-.08	.19	-.45	.29
PARENT-SCHOOL	.56	.21	.35	.49	.38	.10	.27	-.43	.63
CHILD ACADEMIC EXPECTATION	.19	.28	-.09	.21	.50	-.29	.30	-.88	.30
SENSE OF CONTROL	-.03	-.08	.05	-.07	-.01	-.06	.27	-.59	.47
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.30	.71	-.42	.32	.95	-.63	.14	-.90	-.36
PROFESSION. ACCEPT FT	1.28	1.50	-.21	1.30	1.22	.08	.21	-.33	.49

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*See "Guide for Interpretation of Results" for explanation of table entries.

EDC OPEN EDUCATION PROGRAM
Educational Development Center

Sponsor's Intended Approach

The EDC Follow Through approach is a program for helping communities generate the resources to implement open education. It is not specifically a program in compensatory education because it is based on principles EDC considers relevant for the education of all children. The approach is derived in part from ideas and practices evolved over many years in British infant and primary schools. It also draws heavily on knowledge of child development gained during the last 50 years and on EDC experience in curriculum and school reform. EDC believes that learning is facilitated by a child's active participation in the learning process, that it takes place best in a setting where there is a range of materials and problems to investigate, and that children learn in many different ways and thus should be provided with many different opportunities and experiences. In other words, the ability to learn depends in part on the chances to learn provided by the educational setting.

The classrooms are "open," and the children usually choose their activities, drawing on a great variety of materials in the room. The room is often divided into several interest areas for activities in making things, science, social studies, reading, math, art, and music. Small groups of children use any or all of these interest areas during the day. In addition, traditional subjects may be combined with any one interest area. Whether or not interest areas are physically set out, the open classroom is characterized by an interaction of subject matter and by purposeful mobility and choice of activities on the part of the children.

The child's experience is one of the starting points for teaching in an open classroom; the teacher's input is another. The role of the teacher is an active one. Teachers lead children to extend their own projects, through thoughtful responses and suggestions. The classroom is carefully supplied with materials that are likely to deepen children's involvement. The teacher occasionally works with the entire class but more often with a small group or an individual child. Aides and other adults also participate in teaching roles.

Traditional academic skills are important in the open classroom and children have many opportunities to develop them in flexible, self-directed ways that allow learning to become a part of their life style outside as well as in the classroom. EDC believes that if children are going to live fully in the modern world, the schools must embrace objectives that go far beyond literacy training, the dissemination of information, and the acquisition of concepts. This approach is concerned with children's growth in problem-solving skills, their ability to express themselves both creatively and functionally, their social and emotional development, and their ability to take responsibility for their own learning. Accumulated experience in early childhood education in this country and overseas suggests that these larger aims must be taken seriously from the very outset of formal schooling, and that the environment that provides for them also provides a sure foundation for academic learning.

An EDC advisory team makes monthly visits to the community to assist the schools in making the changes needed to develop open education. EDC policy is to work in places with individuals who are ready for change, who have a sense of the directions in which they want to move, and who need and request advisory help.

The advisory team does not attempt to impose specific ideas or methods but tries to extend what individuals are capable of doing. The team helps by suggesting appropriate next steps and provides continuing support to teachers and aides. It conducts workshops for teachers, aides, parents, and administrators; works with teachers and aides in the classroom; provides appropriate books and materials; helps teachers and aides develop their own instructional equipment; and assists school administrators with problems related to classroom change.

EDC is convinced of the important role parents can play in the education of their children. Parents have a right and a responsibility to be involved in all decisions affecting their children. In addition, the teacher's effectiveness is greatly increased by his knowledge of a child's life outside of school. The EDC advisory team helps teachers, aides, and administrators work with parents to make them better informed about the open education program, to use parents as an important resource for knowledge about the children, and to involve parents in decisions concerning the education of their children.

Individual Project Results

Seven samples from three different projects sponsored by the Educational Development Center (ED) were included in the analysis of interim effects. The distribution of these evaluation samples in terms of cohort, outcome and project is as follows:

Cohort	First-year Effects	Second-year Effects
IK	(projects b & c)	(projects b & c)
IE	(project a)	(project a)
IIK	(project b)	

Project ED(c)

Data describing two-year impacts on Cohort I-K are presented in Table 71. This rather small project (300 pupils) is located within a major urban area in the south Atlantic region. The FT children for whom data were included were all Black; in contrast, only 72 percent of the NFT children were Black.

There is evidence that the FT and NFT samples were not well matched on several variables. For example, the NFT sample reported a higher percentage of skilled employment and a substantially higher level of head of household employment than did the FT sample. As might be expected, the FT sample more frequently met poverty level guidelines than did the NFT sample.

The lack of comparability of the two groups is also reflected in the child baseline variables. More of the NFT children had had preschool experience, and the NFT group almost uniformly outperformed FT children on baseline test measures. The FT deficiency was especially severe in reading.

Because of data problems with the NFT sample, analysis of parent impacts was not possible for this project. The teacher data show that FT teachers were less satisfied with their jobs, had fewer book resources, and had less teaching experience than NFT teachers. FT teachers reported more freedom to choose their assignments than did NFT teachers. The two groups were virtually identical on the closeness to the community and the number of helpers in the classroom variables.

TABLE 71

PROJECT DATA TABLE--EDUCATIONAL DEVELOPMENT CENTER PROJECT C, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA							
												CONFIDENCE INTERVAL			
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA	
				PART I CHILD EVALUATION DATA											
NO. OF CLASSROOMS	4	2	2	OVERALL ACHIEVEMENT	119.2	126.9	-7.7	128.3	107.3	21.0	12.06	-1.3	44.6	PROJECT DESCRIPTORS	
AVERAGE PUPILS/CLASSROOM	1.8	--	--												
QUANT. PRESCORE	17.6	23.6	-0.6	AFFECT	17.5	17.6	-0.1	17.9	17.2	0.7	1.27	-1.8	3.2	REGION	SOUTH ATLANTIC
COG. PROCESS PRESCORE	4.6	5.9	-1.3												
READING PRESCORE	28.6	52.5	-23.9	ATTENDANCE	16.9	13.1	3.8	17.2	15.5	1.7	3.95	-6.0	9.4	DISTANCE TO NEAREST SMSA	WITHIN
LANGUAGE PRESCORE	8.6	8.1	0.5												
AFFECT PRESCORE	15.3	18.1	-2.8	WRAT TOTAL	70.6	75.0	-4.4	74.1	64.4	9.7	6.51	-3.1	22.5	SIZE OF NEAREST SMSA	2,482,000
AGE (JUNE '71)	85.0	84.2	0.8												
% CLASSROOM MALE	39.6	49.3	-9.7	QUANTITATIVE	38.8	39.1	-0.3	42.1	33.5	8.6	3.87	1.0	16.2	PERCENT NONWHITE	72
% CLASSROOM BLACK	100.0	72.4	27.6												
% PRESCHOOL (OR NO. MOS.)	45.8	56.2	-10.4	COGNITIVE PROCESSES	6.9	7.1	-0.2	7.3	6.4	0.9	0.72	-.5	2.3	PROJECT SIZE (PUPILS)	300
% PARENTS W/O HS DIPL.	70.8	75.0	-4.2												
% PARENTS W SKILLED OCCUP.	16.7	25.0	-8.3	READING SKILLS	51.1	54.3	-3.2	54.7	44.4	10.3	5.98	-1.4	22.0	NO. PUPILS/PAC MEMBER	13.7
% PARENTS BLACK	100.0	100.0	0												
% PARENTS POVERTY ELIGIBLE	83.3	65.0	18.3	LANGUAGE ARTS	22.4	26.4	-4.0	24.4	22.9	1.5	3.32	-5.0	8.0	FT PER-PUPIL EXPENDITURE	897
% HEAD HOUSEHOLD EMPLOYED	54.2	100.0	-45.8												
% HEAD HOUSEHOLD MALE	50.0	45.0	5.0												
														CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT	
				PART III TEACHER EVALUATION DATA											
NO. OF CLASSROOMS	4	2	2												
JOB. SATISF. RATING	1.2	1.8	-0.6	PARENT-EDUCATOR IMAGE	0.43	0.07	0.36	0.51	-0.02	0.53	0.238	.06	1.00		
BOOK RESOURCE SCALE	2.0	5.0	-3.0												
RACE (BLACK/NONBLACK)	0	0	0												
IDENT. W. COMMUNITY	0	0	0	PROFESSION. ACCEPT OF METHOD	2.00	1.50	0.50	1.99	1.39	0.60	0.333	-.05	1.25		
NO. OF HELPERS	1.0	1.0	0												
ABLE TO CHOOSE ASSIGNMENT	1.6	0	1.6												
TRNG & TEACHER EXPER	2.2	5.5	-3.3												

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

Pupil outcomes show FT-favoring trends on all test variables, with the difference reaching significance on the quantitative skills measure. The teacher outcomes favor FT on both the acceptance of methods and image of parents variables, with the latter effect reaching significance. Since the FT-favoring difference on acceptance of method approached significance, we interpret these results as consistent with the goals of the model. Since this project both incorporated the EDC model and operated as a parent-implemented, self-sponsored project, one would expect a high degree of autonomy and teacher assistance to prevail.

The overall picture presented by the two-year data for Cohort I shows modest, but encouraging, impacts on the children. The positive impacts on teachers may help to sustain and improve impacts on children in subsequent cohort groups. The lack of parent and classroom observation data for this project is unfortunate. It would be interesting to relate these measures to the teacher and pupil outcome variables.

First-year data are also available for Cohort I-K, kindergarten children in this project (see Table 72). This group of children was slightly different from the second-year group, both racially and in amount of preschool experience. The majority of the FT children in the one-year group were non-Black, while the NFT group had a slight Black majority. The FT group also had a higher incidence of preschool experience than their NFT comparisons.

The two groups distinctly lack comparability on demographic and baseline test data. On parental employment and the presence of a male head of household, the FT groups averaged well below the NFT group. However, the samples were virtually identical on poverty eligibility. Also, FT children averaged well below NFT children on all baseline tests.

The adjusted outcome measures for the first-year data reveal no significant differences between the FT and NFT samples. A comparison of adjusted differences for the one- and two-year child outcome data suggests improvements during the second year in every outcome but attendance. While only one measure reaches significance after the second year, two-year outcomes consistently display FT-favoring trends. These trends should, however, be interpreted with caution. The large baseline differences that existed between FT and NFT samples restrict considerably the confidence with which we can interpret these data.

TABLE 72

PROJECT DATA TABLE--EDUCATIONAL DEVELOPMENT CENTER PROJECT C, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	7	4	3	OVERALL ACHIEVEMENT	72.5	95.0	-22.5	93.9	86.1	7.8	6.47	-4.9	20.5
QUANT. PRESCORE	12.3	20.8	-8.5										
COG. PROCESS PRESCORE	2.1	6.2	-4.1	AFFECT	14.1	17.0	-2.9	15.3	16.7	-1.4	1.46	-4.1	1.5
READING PRESCORE	20.4	37.4	-17										
LANGUAGE PRESCORE	5.4	9.9	-4.5	ATTENDANCE	23.4	16.3	7.1	14.0	18.9	-4.9	4.28	-13.3	3.5
AFFECT PRESCORE	16.9	16.0	.9										
AGE (JUNE '71)	83.1	84.1	-1	WRAT TOTAL	34.7	44.7	-10	42.5	40.8	1.7	3.68	-5.5	8.9
% CLASSROOM MALE	47	45.7	1.3										
% CLASSROOM BLACK	36.4	64.7	-28.3	QUANTITATIVE	20.4	26.9	-6.5	27.2	25.2	2.0	1.87	-1.7	5.7
% PRESCHOOL (OR NO. MOS.)	51.9	19.6	32.3										
% PARENTS W/O HS DIPL.	58.8	60.4	-1.6	COGNITIVE PROCESSES	5.3	7	-1.7	6.8	6.5	.3	.62	-.9	1.5
% PARENTS W/SKILLED OCCUP.	12	25.8	-13.8										
% PARENTS BLACK	47.8	69.1	-21.3	READING SKILLS	39.3	48.9	-9.6	48.7	42.8	5.9	4.42	-2.8	14.7
% PARENTS POVERTY ELIGIBLE	85.8	86	-.2										
% HEAD HOUSEHOLD EMPLOYED	30.2	62.2	-32	LANGUAGE ARTS	8.6	12.1	-3.5	11.8	11.6	.2	.95	-1.7	2.1
% HEAD HOUSEHOLD MALE	39.1	53.3	-14.2										

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*See "Guide for Interpretation of Results" for explanation of table entries.

Project ED(b)

With more than 1,100 pupils, this project is one of the largest included in the interim evaluation. The project is located in a large middle Atlantic city (more than 4 million residents) with a substantial minority population (about one third of the inhabitants are nonwhite). Children in this project enter school in kindergarten. Data are available on both Cohort I-K (first- and second-year effects) and Cohort II-K (first-year effects). The Cohort I, two-year data, presented in Table 73, will be considered first.

Covariable data indicate that children in the nine FT and five NFT classrooms that were included in analysis of child outcomes were well matched, both on background data and on tests taken shortly after they entered kindergarten. The two groups display little difference in terms of age, race (almost all children were Black), or percentages of boys and girls in the samples. Differences in demographic variables were also relatively small. About half of the parents in both groups lacked high school diplomas, and employment of head of house was indicated for between two thirds and three fourths of the cases, with slightly more than 25 percent of both samples employed in skilled jobs. Male heads of household were present in about 65 percent of both samples, and the poverty level for FT was slightly higher than that for NFT (61 percent, compared to 55 percent). A difference in the amount of preschool experience was evident, however; 54 percent of the FT sample reported preschool experiences, while only 17 percent of the NFT sample did. The FT and NFT scores on pupil baseline tests were very similar.

The baseline data on the teacher variables suggest that the two teacher groups were fairly comparable. NFT teachers were more likely to resemble their students ethnically and were closer to the community than FT teachers. They also resported slightly more training and experience. FT teachers, however, had greater freedom to choose teaching assignments and had more aides in the classroom, whereas NFT teachers had somewhat more book resources available. Strong satisfaction with working conditions was not noted for either group.

Because of the reasonably good FT/NFT match, adjustments to child outcome measures had only minor impacts on FT/NFT unadjusted differences. An inspection of Table 73 reveals that none of the pupil outcome variables differed reliably from chance expectation. A similar conclusion is apparent in the parent and teacher outcome variables. Neither of these analyses indicated significant differences between the FT and NFT samples.

TABLE 73

PROJECT DATA TABLE--EDUCATIONAL DEVELOPMENT CENTER PROJECT B, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	9	5	4	OVERALL ACHIEVEMENT	120.2	127.0	-6.8	128.5	129.3	-0.8	7.31	-15.1	13.5
AVERAGE PUPILS/CLASSROOM	8.0	7.6	0.4										
QUANT. PRESCORE	18.5	18.6	-0.1	AFFECT	16.9	17.6	-0.7	16.8	17.7	-0.9	0.77	-2.4	.6
COG. PROCESS PRESCORE	5.2	4.5	0.7										
READING PRESCORE	27.5	26.6	0.9	ATTENDANCE	15.9	13.8	2.1	17.1	15.7	1.4	2.39	-3.3	6.1
LANGUAGE PRESCORE	8.8	9.0	-0.2										
AFFECT PRESCORE	15.9	15.1	0.8	WRAT TOTAL	70.1	75.8	-5.7	74.0	76.5	-2.5	3.94	-10.2	5.2
AGE (JUNE '71)	83.0	83.9	-0.9										
% CLASSROOM MALE	51.3	58.0	-6.7	QUANTITATIVE	38.6	38.2	0.4	41.3	39.2	2.1	2.35	-2.5	6.7
% CLASSROOM BLACK	98.6	97.3	1.3										
% PRESCHOOL (OR NO. MOS.)	53.9	17.2	36.7	COGNITIVE PROCESSES	6.9	6.6	0.3	7.3	6.7	0.6	0.44	-.3	1.5
% PARENTS W/O HS DIPL.	47.4	52.5	-5.1										
% PARENTS W/SKILLED OCCUP.	26.2	27.8	-1.6	READING SKILLS	48.9	54.2	-5.3	52.4	55.1	-2.7	3.63	-9.8	4.4
% PARENTS BLACK	98.8	95.0	3.8										
% PARENTS POVERTY ELIGIBLE	61.2	55.4	5.8	LANGUAGE ARTS	25.8	28.0	-2.2	27.6	28.4	-0.8	2.01	-4.7	3.1
% HEAD HOUSEHOLD EMPLOYED	68.2	74.1	-5.9										
% HEAD HOUSEHOLD MALE	63.8	65.4	-1.6										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	9	5	4	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	4.6	5.2	-0.6	INTERACT	-.045	.268	-.313	-.117	-.099	-.216	.239	-.68	.25
% W/O HIGH SCHOOL DIPLOMA	47.4	52.5	-5.1										
% W/SKILLED OCCUP.	26.2	27.8	-1.6	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	72.8	75.0	-2.2	INVOLVE	-.336	-.348	.012	-.448	-.223	-.225	.324	-.86	.41
% BLACK	98.8	95.0	3.8										
% REPORTING USE OF PRESCHOOL	53.9	17.2	36.7	CHILD ACADEMIC									
% POVERTY ELIGIBLE	61.2	55.4	5.8	EXPECT	.276	.129	.147	.572	.374	.198	.336	-.46	.86
% HEAD HOUSEHOLD EMPLOYED	68.2	74.1	-5.9										
% HEAD HOUSEHOLD MALE	63.8	65.4	-1.6	SENSE OF CONTROL	.038	-.259	.297	-.077	-.280	.203	.317	-.42	.82
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	9	5	4	PARENT-EDUCATOR									
JOB SATISF. RATING	1.6	1.8	-0.2	IMAGE	0.07	0.23	-0.16	0.01	0.31	-0.30	0.162	-.62	.02
BOOK RESOURCE SCALE	2.5	3.2	-0.7										
RACE (BLACK/NONBLACK)	0	0.8	-0.8	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	0.5	1.6	-1.1	OF METHOD	2.00	1.80	0.20	2.00	1.78	0.22	0.227	-.22	.66
NO. OF HELPERS	2.0	1.0	1.0										
ABLE TO CHOOSE ASSIGNMENT	3.0	2.2	0.8										
TRNG & TEACHER EXPER	4.0	5.0	-1.0										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	4,021,000
PERCENT NONWHITE	34
PROJECT SIZE (PUPILS) . . .	1,140
NO. PUPILS/PAC MEMBER . . .	14.3
FT PER-PUPIL EXPENDITURE . .	826

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	1.14	
CHILD-INITIATED INTERACTIONS	-1.22	
PROGRAMMED ACADEMIC . . .	.04	
EXPRESSIVE	-.38	
CHILD SELF-LEARNING . . .	.25	

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* See "Guide for Interpretation of Results" for explanation of table entries.

Classroom observation data, collected during the second year, show FT classrooms scoring very high on the self-regulatory factor. This is consistent with the model. The average or low scores on the other factors make plausible the lack of striking findings on child outcomes, although no data on NFT classroom processes are available for comparison.

First-year effects for Cohort I-K are summarized in Table 74. The outcomes for this analysis reveal a single significant difference. NFT students had a significantly lower level of absenteeism than did FT students.

Child covariable and outcome data for Cohort II are included in Table 75. The FT and NFT samples for Cohort II-K are slightly less comparable than the samples for Cohort I-K. Although the proportion of parents reporting high school educations is somewhat higher for FT than for NFT, more FT families were poverty eligible (38 percent FT, 28 percent NFT). The higher poverty level in the FT group is consistent with the greater absence of male heads of household and the higher unemployment and unskilled employment noted in this sample. FT children also had, on the average, slightly (half a month) less preschool than their NFT counterparts. These differences in the demographic variables were not reflected in pupil baseline measures; the FT children performed about as well on baseline tests as did the NFT children. In fact, their scores were slightly higher on most baseline measures. On the language variable, however, the average FT score was 2.3 points below the average NFT score.

All of the adjusted FT/NFT outcome measures favored NFT except attendance, which shows less absenteeism for FT. The only measure showing significant differences was quantitative skills.

The classroom observation data, available for FT classes only, show a pattern similar to the one for Cohort I-K, although even more pronounced. That is, consistent with the model, the self-regulatory factor score is very high and the scores on the other factors, particularly child-initiated interactions and self-learning (both connoting a classroom in which adults do not initiate contacts with children) are low.

Project ED(a)

This project is located 50 to 70 miles from a south Atlantic SMSA with a population of half a million. The population is about 20 percent nonwhite. Included in the interim evaluation are one- and two-year results for children in Cohort I-EF. First grade is the entering year in this rural community.

TABLE 74

PROJECT DATA TABLE--EDUCATIONAL DEVELOPMENT CENTER PROJECT B, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	7	5	2	OVERALL ACHIEVEMENT	95.4	100	-4.6	98.8	103.7	-4.9	5.21	-15.1	5.3
QUANT. PRESCORE	10.5	10.6	-.1										
COG. PROCESS PRESCORE	5.2	4.5	-.7	AFFECT	15.4	16.6	-1.2	15.7	16.9	-1.2	1.18	-3.5	1.1
READING PRESCORE	25.3	26.6	-1.3										
LANGUAGE PRESCORE	8.8	9.0	-.2	ATTENDANCE	22.7	10.9	11.8	21.7	10.5	11.2	3.44	4.5	17.9
AFFECT PRESCORE	15.5	15.1	.4										
AGE (JUNE '71)	82.8	83.9	-1.1	WRAT TOTAL	44	44.6	-.6	46.7	47.1	-.4	2.96	-6.2	5.4
% CLASSROOM MALE	54.6	58	-3.4										
% CLASSROOM BLACK	98.2	97.3	.9	QUANTITATIVE	27.1	27.4	-.3	27.3	27.6	-.3	1.51	-3.3	2.7
% PRESCHOOL (OR NO. MOS.)	56	17.2	38.8										
% PARENTS W/O HS DIPL.	43.8	52.5	-8.7	COGNITIVE PROCESSES	7	6.7	.3	7.2	7.0	.2	.50	-.8	1.2
% PARENTS W/SKILLED OCCUP.	24.3	27.9	-3.6										
% PARENTS BLACK	98.4	95	3.4	READING SKILLS	48.8	53.3	-4.5	52.2	56.9	-4.7	3.56	-11.7	2.3
% PARENTS POVERTY ELIGIBLE	59.6	55.4	4.2										
% HEAD HOUSEHOLD EMPLOYED	71.5	74.1	-2.6	LANGUAGE ARTS	12.3	12.6	-.3	12.3	12.8	-.5	.77	-2.0	1.0
% HEAD HOUSEHOLD MALE	61.1	65.4	-4.3										

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 75

PROJECT DATA TABLE--EDUCATIONAL DEVELOPMENT CENTER PROJECT B, COHORT II, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1970-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						PROCESS DATA	
												CONFIDENCE INTERVAL			
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH		
					PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	2	2	0	OVERALL ACHIEVEMENT	91.2	107.3	-16.1	85.9	99.0	-13.1	9.28	-31.3	5.1	PROJECT DESCRIPTORS	
AVERAGE PUPILS/CLASSROOM	16.0	13.0	3.0												
QUANT. PRESCORE	16.0	16.9	-0.9	AFFECT	14.7	17.9	-3.2	14.7	17.0	-2.3	1.35	-4.9	.3	REGION	MIDDLE ATLANTIC
COG. PROCESS PRESCORE	4.7	3.8	0.9												
READING PRESCORE	25.6	25.3	0.3	ATTENDANCE	21.1	25.4	-4.3	17.5	25.0	-7.5	4.41	-16.1	1.1	DISTANCE TO NEAREST SMSA	WITHIN
LANGUAGE PRESCORE	12.4	14.7	-2.3												
AFFECT PRESCORE	16.2	15.4	0.8	WRAT TOTAL	42.5	48.5	-6.0	36.6	43.7	-7.1	6.47	-19.8	5.6	SIZE OF NEAREST SMSA	4,021,000
AGE (JUNE '71)	70.8	73.0	-2.2												
% CLASSROOM MALE	56.8	33.3	23.5	QUANTITATIVE	22.0	26.7	-4.7	18.7	24.6	-5.9	2.70	-11.2	-.6	PERCENT NONWHITE	34
% CLASSROOM BLACK	95.5	100.0	-4.5												
% PRESCHOOL (OR NO. MOS.)	0.7	1.3	-0.6	COGNITIVE PROCESSES	6.5	8.1	-1.6	6.6	7.4	-0.8	0.59	-2.0	.4	PROJECT SIZE (PUPILS)	1,140
% PARENTS W/O HS DIPL.	46.1	55.6	-9.5												
% PARENTS W SKILLED OCCUP.	48.1	55.5	-7.4	READING SKILLS	47.5	54.8	-7.3	43.1	48.0	-4.9	6.01	-16.7	6.9	NO. PUPILS/PAC MEMBER	14.3
% PARENTS BLACK	97.1	100.0	-2.9												
% PARENTS POVERTY ELIGIBLE	37.5	28.5	9.0	LANGUAGE ARTS	15.1	17.7	-2.6	16.8	18.4	-1.6	1.37	-4.3	1.1	FT PER-PUPIL EXPENDITURE	826
% HEAD HOUSEHOLD EMPLOYED	60.9	77.8	-16.9												
% HEAD HOUSEHOLD MALE	63.8	77.8	-14.0												

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	1.52	
CHILD-INITIATED INTERACTIONS	-1.93	
PROGRAMMED ACADEMIC	-.51	
EXPRESSIVE	-.69	
CHILD SELF-LEARNING	-.98	

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*See "Guide for Interpretation of Results" for explanation of table entries.

Covariable data describing the children in Cohort I-EF, presented in Table 76, indicate a fairly severe mismatch between the FT and NFT groups. On demographic variables, FT children appear less disadvantaged than project children at some other sites, but much more disadvantaged than the NFT children who made up the comparison group. The typical family in both groups included an employed male head of house. However, about half the FT parents lacked high school diplomas, while the majority (about 80 percent) of the NFT parents had completed high school. Level of employment was high for both groups, but more skilled occupations were associated with NFT families (75 percent versus 55 percent). FT children were more often Black and more frequently came from poverty-eligible homes. The majority of both samples reported preschool experience, with a slightly higher experience rate in the FT sample. On baseline test measures, NFT children performed consistently better than FT children, with the most striking differences in the areas of reading, language, and affect.

The baseline data for the six FT and six NFT teachers show that FT teachers had less experience, less freedom to choose their teaching assignment, and, surprisingly, fewer classroom helpers than NFT teachers. FT teachers did report more book resources and slightly more satisfaction with working conditions.

There were no significant differences between FT and NFT children on any of the pupil outcome variables. The slight differences consistently favored NFT on all of the test variables, but attendance favored FT.

The parent outcome analysis yielded one significant difference. FT parents reported significantly more involvement in school than NFT parents. No other differences on parent or teacher outcomes reached significance.

The significant parent/school involvement outcome is consistent with the high degree of parental involvement suggested by the large PAC for this project during the 1970-71 school year.

One-year data on these Cohort I-EF children are presented in Table 77. The adjusted pupil outcome measures generally reveal minimal differences between FT and NFT pupils. The one exception is the significant advantage noted for the FT children on the cognitive processes measure.

In summary, it appears that this program has had minimal impact on pupil and teacher outcomes in this project. The lack of classroom observation data at this site makes interpretation difficult. Data collected from parents, on the other hand, are encouraging.

TABLE 70

PROJECT DATA TABLE--EDUCATIONAL DEVELOPMENT CENTER PROJECT A, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						
												CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	PROCESS DATA
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	6	8	-2	OVERALL ACHIEVEMENT	157.7	191.0	33.3	138.8	144.3	-5.5	9.74	-24.6	13.6	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	24.3	4.6	19.7											
QUANT. PRESCORE	34.8	35.8	-1.0	AFFECT	19.2	19.5	-0.3	18.4	18.7	-0.3	0.63	-1.5	.9	SOUTH
COG. PROCESS PRESCORE	7.5	8.1	-0.6											REGION . . . . ATLANTIC
READING PRESCORE	64.8	75.9	-11.1	ATTENDANCE	7.0	10.1	-3.1	10.1	12.4	-2.3	3.22	-8.6	4.0	
LANGUAGE PRESCORE	14.4	17.1	-2.7											DISTANCE TO NEAREST SMSA . . 50-70 MILES
AFFECT PRESCORE	17.4	19.5	-2.1	WRAT TOTAL	105.1	118.7	-13.6	98.7	102.1	-3.4	4.19	-11.6	4.8	
AGE (JUNE '71)	97.0	96.1	0.8											SIZE OF NEAREST SMSA 500,000
% CLASSROOM MALE	51.1	41.9	9.2	QUANTITATIVE	45.4	50.8	-5.4	39.8	40.4	-0.6	2.93	-6.3	5.1	
% CLASSROOM BLACK	25.5	4.9	20.6											PERCENT NONWHITE 19
% PRESCHOOL (OR NO. MOS.)	91.4	79.8	11.7	READING SKILLS	84.9	106.7	-21.8	74.6	79.1	-4.5	6.44	-17.2	8.2	
% PARENTS W/O HS DIPL.	51.4	22.9	28.5											PROJECT SIZE (PUPILS) . . . 582
% PARENTS W SKILLED OCCUP.	54.9	75.8	-20.9	LANGUAGE ARTS	27.4	33.4	-6.0	24.4	24.8	-0.4	1.94	-4.2	3.4	
% PARENTS BLACK	22.6	4.6	18.0											NO. PUPILS/PAC MEMBER . . . 6.1
% PARENTS POVERTY ELIGIBLE	29.8	5.6	24.2											
% HEAD HOUSEHOLD EMPLOYED	95.2	95.0	0.2											FT PER-PUPIL EXPENDITURE . . 604
% HEAD HOUSEHOLD MALE	89.3	97.5	-8.2											
				PART II PARENT EVALUATION DATA										CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT
NO. OF CLASSROOM GROUPS	6	7	-1	PARENT-CHILD										
AV. PARENTS/CLASSRM GRP	15.3	4.7	10.6	INTERACT	.520	.520	-.000	.384	.147	.237	.235	-.22	.70	
% W/O HIGH SCHOOL DIPLOMA	51.4	19.0	32.4											
% W SKILLED OCCUP.	54.9	79.3	-24.4	PARENT-SCHOOL										
% POS EVAL OF CHILD LRNG	73.7	58.3	15.4	INVOLVE	.030	-.375	.405	-.153	-.960	.807	.287	.24	1.37	
% BLACK	22.6	5.3	17.3											
% REPORTING USE OF PRESCHOOL	91.4	81.6	9.8	CHILD ACADEMIC										
% POVERTY ELIGIBLE	29.8	6.4	23.4	EXPECT	-.123	.107	-.230	-.318	-.091	-.227	.284	-.78	.33	
% HEAD HOUSEHOLD EMPLOYED	95.2	94.3	0.9											
% HEAD HOUSEHOLD MALE	89.3	97.1	-7.8	SENSE OF CONTROL	.289	.090	.199	.480	.174	.306	.276	-.23	.85	
				PART III TEACHER EVALUATION DATA										
NO. OF CLASSROOMS	6	6	0	PARENT-EDUCATOR										
JOB SATISF. RATING	1.9	1.6	0.3	IMAGE	0.21	0.28	-0.07	0.39	0.42	-0.03	0.179	-.38	.32	
HOME RESOURCE SCALE	4.7	3.7	1.0											
RACE (BLACK/NONBLACK)	0.8	1.0	-0.2	PROFESSION. ACCEPT										
IDENT. W. COMMUNITY	1.3	1.5	-0.2	OF METHOD	2.00	1.67	0.33	2.00	1.96	0.04	0.269	-.49	.57	
NO. OF HELPERS	1.0	1.2	-0.2											
ABLE TO CHANGE ASSIGNMENT	1.5	2.0	-0.5											
YRS & TEACHER EXPER	3.1	5.1	-2.0											

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 77

PROJECT DATA TABLE--EDUCATIONAL DEVELOPMENT CENTER PROJECT A, COHORT I, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1969-1970

								ADJUSTED OUTCOME DATA					
BASELINE/CONTROL DATA				OUTCOME DATA								CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S.E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	6	8	-2	OVERALL ACHIEVEMENT	143.6	148.9	-5.3	134.0	129.2	4.8	3.23	-1.5	11.1
QUANT. PRESCORE	34.8	35.8	-1.0										
COG. PROCESS PRESCORE	7.6	8.1	-.5	AFFECT	18.5	19.8	-1.3	19.4	19.9	-.5	1.02	-2.5	1.5
READING PRESCORE	64.8	75.9	-11.1										
LANGUAGE PRESCORE	14.4	17.1	-2.7	ATTENDANCE	8.5	5.4	3.1	6.0	5.9	.1	2.80	-5.4	5.6
AFFECT PRESCORE	17.4	19.5	-2.1										
AGE (JUNE '71)	96.9	96.1	.8	WRAT TOTAL	70.0	72.6	-2.6	65.3	64.1	1.2	2.34	-3.4	5.8
% CLASSROOM MALE	51.1	41.9	9.2										
% CLASSROOM BLACK	25.5	4.9	20.6	QUANTITATIVE	37.7	40.2	-2.5	34.7	34.4	.3	.99	-1.6	2.2
% PRESCHOOL (OR NO. MOS.)	91.5	79.8	11.7										
% PARENTS W/O HS DIPL.	51.4	22.9	28.5	COGNITIVE PROCESSES	9.2	8.9	.3	8.4	7.5	.9	.37	.2	1.6
% PARENTS W/SKILLED OCCUP.	54.9	75.8	-20.9										
% PARENTS BLACK	22.6	4.6	18.0	READING SKILLS	79.2	80.2	-1.0	75.1	71.4	3.7	2.56	-1.3	8.7
% PARENTS POVERTY ELIGIBLE	29.8	5.6	24.2										
% HEAD HOUSEHOLD EMPLOYED	95.2	95.0	.2	LANGUAGE ARTS	17.5	19.5	-2.0	15.8	15.9	-.1	.68	-1.4	1.2
% HEAD HOUSEHOLD MALE	89.3	97.5	-8.2										

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*See "Guide for Interpretation of Results" for explanation of table entries.

Summary

Separate summary analyses on the EDC Open Education Program are reported only for Cohort I-K, two-year groups, which include two project samples. Sponsor summaries based on a single project are not repeated in this section.

The salient features of this FT approach are summarized below:

Focus and Objectives--long range program objectives.

Child

Cognitive

- Develop competence in basic skills
- Promote problem solving skills

Affective

- Develop ability in self-expression
- Develop self-direction

Curricular Approach

- Teacher's role that of facilitator
- Reinforcement primarily from activities
- Child generally free to choose among wide variety of activities
- Individual/small group focus

Type of Parent Involvement

- Inform parents about program
- Teachers use parents as resource in planning child's education
- Some form of decision making

The results of the outcome analysis are presented in Table 78. An inspection of the table indicates that the program produced no significant FT-favoring results on the child outcome measures. The FT group performed slightly better on four individual variables, the NFT group, on three variables. Results of parent outcome analyses show NFT parents reported interacting with their children to a significantly greater extent than did FT parents. No other parent outcome differences reached significance.

The analysis of teacher outcome variables at the sponsor level suggests that there were no reliable differences between FT and NFT teachers. However, classroom observation process data indicate that the model is being implemented according to its specified goals.

TABLE 78

EDUCATIONAL DEVELOPMENT CENTER SUMMARY, COHORT I, KINDERGARTEN ENTERING PROJECTS: TWO-YEAR EFFECTS, 1969-1971

				ADJUSTED OUTCOME DATA					
	UNADJUSTED MEANS							CONFIDENCE INTERVAL	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	119.9	127.0	-7.1	123.9	120.1	3.8	6.76	-9.4	17.0
AFFECT	17.1	17.6	-.5	17.3	17.7	-.4	.65	-1.7	.9
WRAT	70.3	75.6	-5.3	71.8	71.9	-.1	3.77	-7.5	7.3
QUANTITATIVE	38.7	38.5	.2	39.9	36.4	3.4	2.16	-.8	7.6
COG. PROCESS	6.9	6.7	.2	7.1	6.4	.6	.39	-.2	1.4
READING	49.6	54.2	-4.7	51.1	50.8	.3	3.40	-6.4	6.7
LANGUAGE	24.7	27.5	-2.8	25.8	26.3	-.5	1.82	-4.1	3.1
PARENT DATA									
PARENT-CHILD	-.15	.25	-.40	-.26	.23	-.50	.21	-.9	-.09
PARENT-SCHOOL	-.27	-.20	-.07	-.44	-.17	-.28	.29	-.85	.29
CHILD ACADEMIC EXPECTATION	.43	.19	.24	.36	.26	.10	.32	-.53	.73
SENSE OF CONTROL	-.06	-.11	.05	-.13	-.08	-.05	.29	-.62	.52
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.18	.18	.0	.10	.21	-.11	.14	-.38	.16
PROFESSION. ACCEPT FT	2.0	1.71	.28	2.08	1.71	.37	.20	-.02	.76

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* See "Guide for Interpretation of Results" for explanation of table entries.

Interpretation and evaluation of this general lack of impact evidence for this sponsor, and for the individual projects, must include consideration of the occasionally severe lack of comparability of these FT and NFT samples, which, we suspect, seriously confounds the analysis of effects. Hence, it is possible that many results were undetected or are grossly underestimated on the basis of these data.

INTERDEPENDENT LEARNING MODEL
New York University

Sponsor's Intended Approach

The Interdependent Learning Model (ILM) is a transactional approach to education that focuses on the learner as an individual and on the social interactional context within which learning occurs. It contains elements of both the open classroom and individualized program approaches, but is distinguished by its strong focus on small group interaction as the basic structure out of which learning emerges. This derives from the conviction that a child gains most of his knowledge from interaction within his family and with his peers rather than while sitting at a desk. If education is truly preparation for life, the theory goes, it needs to be more life-like in its structure.

ILM, for example, advocates an emergent approach to language development in which communication rather than language per se is stressed. A child develops language proficiency by being presented with situations of increasing complexity that motivate him to express himself verbally. Language emerges from situations rather than being prescribed. Games and game-like activities play a major role in bringing this about.

Games are a central feature of the ILM model, often being used in combination with certain aspects of programmed instruction to achieve instructional and social objectives. Since the focus is on "learning to learn," curriculum content is not specific, although suggested games dealing with specific content areas, such as language, are being developed. In introducing new games the teacher typically follows a strategy of teaching from within; she demonstrates how to play by actually playing the game with a group, verbalizing what is being done and why and serving as a model rather than actually teaching; ultimately she transfers much of the control to the game rules, encouraging the children to direct their own learning.

The advantages seen in games further defines the philosophy of this approach. They can be played by individuals with different levels of competence, with the more advanced helping the others. They provide feedback to the child both by way of the game materials themselves and from the other participants; the child monitors the "correctness" of his own response as well as that of others. Games can approximate events in "real life" minus the risk factor. Starting with the benefit of game rules, groups can be quickly formed and sustained with minimal adult direction. Thus, children can be led to assume increasing responsibility for making choices and managing their own behavior.

The small group approach is considered just as appropriate for developing the teaching role as the learning role in this model. The adults in the classroom are considered to be a team participating equally in decision-making and teaching functions. They are expected to meet with other teams to pool ideas, share materials, and provide mutual support. The team implements the model gradually, introducing changes in the classroom only as the team becomes relatively comfortable with them.

Joint participation between sponsor and the local project governs model implementation overall. The sponsor helps the local site develop its program according to its own needs and objectives through a coordinator serving as chief liaison between the site and the sponsor's staff. In training sessions, local staff work as apprentices to sponsor consultants at the beginning of workshops and take over training sessions by the end of the training period. As part of the training, local staff also design preservice workshops for their own sites. Responsibility for training and implementation is steadily delegated to local staff until the model finally functions autonomously.

ILM considers parents an integral part of the educational teams and urges schools to invite them into the classroom to play a real role in the educational process and to participate in model improvement. The game approach allows parents to play leadership roles in the classroom, even though their own formal education may be limited. Parents unable to participate directly in the classroom are encouraged through workshops and home visits to learn the instructional games their children are playing and to play the games with them at home.

Individual Project Results

Three samples from two different projects sponsored by New York University (NY) were included in the analysis of interim effects. The distribution of these evaluation samples in terms of cohort, outcome, and project is as follows:

Cohort	First-year Effects	Second-year Effects
IK		(projects a&b)
IIK	(project a)	

Project NY(a)

Project NY(a) is a very large kindergarten entrance project (1,109 pupils) implemented in a racially mixed community (52 percent nonwhite) in a large south Atlantic urban area (SMSA = 1,173,000). A Cohort I and Cohort II sample are included in this project. Second-year data for the Cohort I sample are presented in Table 79. Baseline averages for the ten FT and twelve NFT classes are quite comparable. In fact, of the many projects included in this interim evaluation analysis, Project NY(a) has one of the best matches of FT and NFT groups. There is one moderately serious problem with these project data. Pupil baseline averages show both FT and NFT groups as averaging 0 percent on preschool experience, an inaccurate statistic caused by incomplete roster data obtained in Fall 1969. Parent reports show that the 56.8 percent of the FT children and none of the NFT children had preschool experience. Although these data are also incorrect, it seems more likely that they represent true differences in preschool experience. These two errors, however, result in inappropriate covariance adjustments in the outcome data. In the case of pupil scores, the likely effect is an under-adjustment. In the case of the parent outcomes, over-adjusting likely resulted. Problems such as these seriously complicate the task of interpreting analysis results.

Nevertheless, significant FT/NFT differences can be noted on the quantitative measure and on attendance. Both of these results are FT-favoring and suggest that FT pupils may be more interested in school and learning more than comparable NFT pupils.

TABLE 79

PROJECT DATA TABLE--NEW YORK UNIVERSITY PROJECT A, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA

VARIABLE	FT	NFT	DIFF
NO. OF CLASSROOMS	10	12	-2
AVERAGE PUPILS/CLASSROOM	7.1	4.7	24
QUANT. PRESCORE	16.7	17.6	-0.9
COG. PROCESS PRESCORE	4.7	4.9	-0.2
READING PRESCORE	34.1	29.9	4.2
LANGUAGE PRESCORE	9.0	9.3	-0.7
AFFECT PRESCORE	14.9	17.7	-2.8
AGE (JUNE '71)	83.2	83.1	0.1
% CLASSROOM MALE	43.0	53.6	-10.6
% CLASSROOM BLACK	89.7	91.8	-2.1
% PRESCHOOL (OR NO. MOS.)	0	0	0
% PARENTS W/O HS DIPL.	71.2	72.4	-1.2
% PARENTS W SKILLED OCCUP.	22.3	22.0	0.3
% PARENTS BLACK	82.7	90.1	-7.4
% PARENTS POVERTY ELIGIBLE	78.1	76.2	1.9
% HEAD HOUSEHOLD EMPLOYED	68.7	69.9	-1.2
% HEAD HOUSEHOLD MALE	49.2	46.5	2.7
NO. CLASSROOM GROUPS	10	11	-1
AV. PARENTS/CLASSRM GRP	6.3	3.6	2.7
% W/O HIGH SCHOOL DIPLOMA	71.2	69.9	1.3
% W SKILLED OCCUP.	22.3	24.0	-1.7
% POS EVAL OF CHILD LRNG	86.1	75.0	11.1
% BLACK	82.7	89.2	-6.5
% REPORTING USE OF PRESCHOOL	56.8	0	56.8
% POVERTY ELIGIBLE	78.1	74.1	4.0
% HEAD HOUSEHOLD EMPLOYED	68.7	71.7	-3.0
% HEAD HOUSEHOLD MALE	49.2	50.8	-1.6
NO. OF CLASSROOMS	10	12	-2
JOB SATISF. RATING	1.6	2.0	-0.4
BOOK RESOURCE SCALE	2.5	4.4	-1.9
RACE (BLACK/NONBLACK)	0.2	0	0.2
IDENT. W. COMMUNITY	0.5	0.6	-0.1
NO. OF HELPERS	0.7	1.2	-0.5
ABLE TO CHOOSE ASSIGNMENT	2.0	0.4	1.6
TRNG & TEACHER EXPER	6.0	6.0	0

OUTCOME DATA				ADJUSTED OUTCOME DATA					
								CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
PART I CHILD EVALUATION DATA									
OVERALL ACHIEVEMENT	117.3	104.7	12.6	115.9	107.8	8.1	5.77	-3.2	19.4
AFFECT	17.1	17.7	-0.6	18.1	17.8	0.3	0.61	-.9	1.5
ATTENDANCE	11.7	18.5	-6.8	12.3	19.8	-7.5	1.89	-11.2	-3.8
WRAT TOTAL	68.6	63.1	5.5	67.0	64.4	2.6	3.12	-3.5	8.7
QUANTITATIVE	35.8	30.3	5.5	36.2	31.0	5.2	1.85	1.6	8.8
COGNITIVE PROCESSES	7.1	7.2	-0.3	6.9	7.4	-0.5	0.35	-1.2	.2
READING SKILLS	50.1	44.5	5.6	48.8	46.2	2.6	2.87	-3.0	8.2
LANGUAGE ARTS	24.2	22.6	1.6	24.1	23.3	0.8	1.59	-2.3	3.9
PART II PARENT EVALUATION DATA									
PARENT-CHILD INTERACT	-.121	.043	-.164	-.083	-.072	-.011	.200	-.40	.38
PARENT-SCHOOL INVOLVE	.137	-.347	.484	.174	0	.174	.271	-.36	.71
CHILD ACADEMIC SCHOOL	.134	.270	-.136	.037	.432	-.395	.280	-.94	.15
SENSE OF CONTROL	.135	-.369	.504	.046	-.295	.341	.265	-.18	.86
PART III TEACHER EVALUATION DATA									
PARENT-EDUCATOR IMAGE	0.32	0.60	-0.28	0.33	0.49	-0.16	0.123	-.40	.08
PROFESSION. ACCEPT OF METHOD	1.75	1.20	0.55	1.64	1.04	0.60	0.172	.26	.94

PROCESS DATA

PROJECT DESCRIPTORS

REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA .	WITHIN
SIZE OF NEAREST SMSA . . .	1,173,000
PERCENT NONWHITE	52
PROJECT SIZE (PUPILS) . . .	1,109
NO. PUPILS/PAC MEMBER . . .	19.6
FT PER-PUPIL EXPENDITURE	812

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.59	-.71
CHILD-INITIATED INTERACTIONS	.58	.87
PROGRAMMED ACADEMIC	-.15	-.55
EXPRESSIVE	-.70	-.83
CHILD SELF-LEARNING	.57	-.65

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*See "Guide for Interpretation of Results" for explanation of table entries.

Parent measures fail to display significant FT/NFT differences. However, FT teachers reported significantly greater approval of their methods than did NFT teachers. This result is mildly súrprising, since these same FT teachers appeared less pleased with their general working conditions and resources and reported fewer helpers than the NFT teachers. Perhaps they preceive the appropriateness of their procedures, but feel that circumstances still could be better.

On classroom observation data, FT classes differ from NFT classes on the self-regulatory and child self-learning factors. Since both factors include independent activity by the children, these scores are in accord with the sponsor's advocacy of game materials in the curriculm and the model's focus on the learner and his interactions with peers. The classroom averages are not dramatically different from zero on any of the factors, however, and do not by themselves assist our understanding of the FT child outcome data.

Data for the Cohort II, one-year sample from Project NY(a) are presented in Table 80. FT and NFT groups in this sample, consisting of eight FT and two NFT classes, were moderately comparable on baseline measures. Some discrepancies appear on parent educational and occupational levels, with FT being higher than NFT. Also, it should be noted that not quite as many FT families had male heads of household, and many of the mothers reported they were currently working.

In this case, the adjustments for lack of comparability between the FT and NFT groups on family-social variables reduced the apparent size of FT-favoring differences on pupil outcomes. This adjustment differs from the more common one, which increases FT-favoring differences, because, in this project, unlike most, FT parents were less disadvantaged than NFT parents. We present these comments only to allay concern that "true" differences are being obscured by the analysis. We do not believe that they are; there just do not appear to be any significant results--either pupil or parent--for the one-year, Cohort II outcomes in this project.

The classroom observation factors scores do not give us a consistent picture of implementation nor do they illuminate the lack of differences between child outcome scores for the two groups. While the FT score on the programmed academic factor was higher than the extremely low NFT score, FT classes were lower on that factor than FT classes in most other projects. Consistent with the model, FT classes differed considerably from comparison classes on the self-regulatory and child self-learning factors, but on the latter the average FT score was below the general mean and well below the mean of Cohort I classrooms in the same project.

TABLE 80

PROJECT DATA TABLE--NEW YORK UNIVERSITY PROJECT A, COHORT II, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1970-1971 *

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	8	2	6	OVERALL ACHIEVEMENT	91.3	76.1	15.2	87.2	78.7	8.5	8.19	-7.6	24.6
AVERAGE PUPILS/CLASSROOM	18.9	10.0	8.9										
QUANT. PRESCORE	13.3	13.5	-0.2	AFFECT	15.6	15.1	0.5	15.4	15.1	0.3	1.19	-2.0	2.6
COG. PROCESS PRESCORE	3.7	3.5	0.2										
READING PRESCORE	20.1	19.0	1.1	ATTENDANCE	17.9	23.8	-5.7	13.5	18.7	-5.2	3.90	-12.8	2.4
LANGUAGE PRESCORE	11.8	11.3	0.5										
AFFECT PRESCORE	15.0	16.2	-1.2	WRAT TOTAL	40.6	32.5	8.1	36.3	32.5	3.8	5.71	-7.4	15.0
AGE (JUNE '71)	71.7	71.0	0.7										
% CLASSROOM MALE	51.8	49.5	2.3	QUANTITATIVE	23.7	19.2	4.5	21.3	18.5	2.8	2.38	-1.9	7.5
% CLASSROOM BLACK	98.8	100.0	-1.2										
% PRESCHOOL (OR NO. MOS.)	1.1	0.5	0.6	COGNITIVE PROCESSES	6.3	5.5	0.8	5.9	5.3	0.6	0.52	-.4	1.6
% PARENTS W/O HS DIPL.	66.8	87.5	-20.7										
% PARENTS W SKILLED OCCUP.	28.5	12.5	16.0	READING SKILLS	45.6	38.4	7.2	43.2	40.2	3.0	5.31	-7.4	13.4
% PARENTS BLACK	99.0	100.0	-1.0										
% PARENTS POVERTY ELIGIBLE	70.4	81.2	-10.8	LANGUAGE ARTS	15.7	13.1	2.6	16.1	14.0	2.1	1.21	-.3	4.5
% HEAD HOUSEHOLD EMPLOYED	64.7	54.2	10.5										
% HEAD HOUSEHOLD MALE	37.9	41.7	-3.8										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	8	2	6										
AV. PARENTS/CLASSRM GRP	9.9	8.0	1.9	PARENT-CHILD INTERACT	-.073	-.382	.310	-.245	-.554	.309	.346	-.37	.99
% W/O HIGH SCHOOL DIPLOMA	66.8	87.5	-20.7										
% W SKILLED OCCUP.	28.5	12.5	16.0										
% POS EVAL OF CHILD LRNG	67.6	50.0	17.6	PARENT-SCHOOL INVOLVE	-.073	-.096	.023	.110	-.158	.268	.435	-.58	1.12
% BLACK	99.0	100.0	-1.0										
% REPORTING USE OF PRESCHOOL	31.9	50.0	-18.1										
% POVERTY ELIGIBLE	70.4	81.2	-10.8	CHILD ACADEMIC EXPECT	-.288	-.348	.059	-.220	.080	-.230	.327	-.87	.41
% HEAD HOUSEHOLD EMPLOYED	64.7	54.2	10.5										
% HEAD HOUSEHOLD MALE	37.9	41.7	-3.8	SENSE OF CONTROL	.233	-.151	.385	.261	-.096	.357	.464	-.55	1.27

PROCESS DATA

PROJECT DESCRIPTORS

REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA	WITHIN
SIZE OF NEAREST SMSA	1,173,000
PERCENT NONWHITE	52
PROJECT SIZE (PUPILS)	1,109
NO. PUPILS/PAC MEMBER	19.6
FT PER-PUPIL EXPENDITURE	812

CLASSROOM OBSERVATION FACTOR SCORES

FACTOR NAME	FT	NFT
SELF REGULATORY	.55	-.51
CHILD-INITIATED INTERACTIONS	.72	.77
PROGRAMMED ACADEMIC	-.67	-2.03
EXPRESSIVE	-.74	-.89
CHILD SELF-LEARNING	-.33	-1.10

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*See "Guide for Interpretation of Results" for explanation of table entries.

Project NY(b)

Project NY(b) is a "big city" project located in the huge mid-Atlantic population center. The project is moderately small with near adverage PAC size and anticipated per-pupil expenditure. Nearly all pupils for whom data were analyzed were Black.

The evaluation sample from NY(b) consists of second-year data for Cohort I pupils. These data are presented in Table 81. The FT and NFT groups are moderately comparable. Again, FT pupils are superior on baseline tests and their families were less disadvantaged than the NFT families.

Pupil measures show that NFT pupils had significantly better attendance than FT pupils. No other pupil differences reach significance. In addition, none of the parent measures reveal significant FT effects. This result suggests that the parents of this project sample may not have reached the level of involvement and participation emphasized by the model at the time data were gathered. FT teachers, however, displayed evidence of significantly greater approval and acceptance of their methods (presumably the model's approach) than the NFT teachers, and since it seems likely that the long-range success of this kind of program is highly dependent on positive teacher regard and compliance, we interpret this teacher outcome as encouraging for the model.

Summary

The salient features of the New York University approach to Follow Through can be outlined as follows:

Focus and Objectives--emphasizes long term program objectives

Child

Cognitive

Develop problem solving ability
Develop language competence

Affective

Develop self-direction
Develop cooperative behavior

TABLE 81

PROJECT DATA TABLE--NEW YORK UNIVERSITY PROJECT B, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	6	5	1	OVERALL ACHIEVEMENT	131.4	117.0	14.4	125.9	126.6	-0.7	7.82	-16.0	14.6
AVERAGE PUPILS/CLASSROOM	11.2	4.8	6.4										
QUANT. PRESCORE	20.7	16.3	4.4	AFFECT	17.3	17.5	-0.2	17.2	17.6	-0.4	0.82	-2.0	1.2
COG. PROCESS PRESCORE	5.3	4.1	1.2										
READING PRESCORE	41.3	34.7	6.6	ATTENDANCE	18.5	13.1	5.4	19.4	13.9	5.5	2.56	.5	10.5
LANGUAGE PRESCORE	9.7	7.8	1.9										
AFFECT PRESCORE	16.5	16.0	0.5	WRAT TOTAL	80.2	72.4	7.8	76.6	76.0	0.6	4.22	-7.7	8.9
AGE (JUNE '71)	83.8	82.9	0.9										
% CLASSROOM MALE	50.7	52.5	-1.8	QUANTITATIVE	39.0	34.3	4.7	37.7	38.0	-0.3	2.51	-5.2	4.6
% CLASSROOM BLACK	96.7	100.0	-3.3										
% PRESCHOOL (OR NO. MOS.)	52.0	30.7	21.3	COGNITIVE PROCESSES	6.8	6.1	0.7	6.6	6.4	0.2	0.47	-.7	1.1
% PARENTS W/O HS DIPL.	66.2	75.8	-9.6										
% PARENTS W SKILLED OCCUP.	35.7	27.1	8.6	READING SKILLS	58.5	50.7	7.8	55.6	54.1	1.5	3.88	-6.1	9.1
% PARENTS BLACK	98.3	100.0	-1.7										
% PARENTS POVERTY ELIGIBLE	75.2	71.5	3.7	LANGUAGE ARTS	27.0	25.9	1.1	25.8	28.1	-2.3	2.15	-6.5	1.9
% HEAD HOUSEHOLD EMPLOYED	60.0	42.5	17.5										
% HEAD HOUSEHOLE MALE	44.6	35.0	9.6										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	6	4	2	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	9.2	6.0	3.2	INTERACT	.279	.432	-.153	.271	.415	-.144	.271	-.68	.39
% W/O HIGH SCHOOL DIPLOMA	66.2	69.7	-3.5										
% W SKILLED OCCUP.	35.7	27.1	8.6	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	78.7	79.2	-0.5	INVOLVE	.546	.193	.353	.525	.234	.291	.367	-.43	1.00
% BLACK	98.3	100.0	-1.7										
% REPORTING USE OF PRESCHOOL	52.0	38.4	13.6	CHILD ACADEMIC									
% POVERTY ELIGIBLE	75.2	64.3	10.9	EXPECT	.035	.337	-.302	.225	.558	-.333	.381	-1.08	.41
% HEAD HOUSEHOLD EMPLOYED	60.0	53.2	6.8										
% HEAD HOUSEHOLD MALE	44.6	43.8	0.8	SENSE OF CONTROL	.361	.011	.350	.288	-.060	.348	.360	-.36	1.05
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	6	5	1	PARENT-EDUCATOR									
JOB SATISF. RATING	1.6	1.7	-0.1	IMAGE	0.50	0.36	0.14	0.42	0.40	0.02	0.159	-.29	.33
BOOK RESOURCE SCALE	2.2	3.5	-1.3										
RACE (BLACK/NONBLACK)	1.0	1.0	0	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	0.2	0	0.2	OF METHOD	1.75	1.00	0.75	1.97	1.10	0.87	0.221	.44	1.30
NO. OF HELPERS	2.0	1.0	1.0										
ABLE TO CHOOSE ASSIGNMENT	1.2	1.0	0.2										
TRNG & TEACHER EXPER	5.0	4.5	0.5										

PROCESS DATA	
PROJECT DESCRIPTORS	
REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	16,207,000
PERCENT NONWHITE	25
PROJECT SIZE (PUPILS) . . .	425
NO. PUPILS/PAC MEMBER . . .	16.9
FT PER-PUPIL EXPENDITURE . .	807

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

Curricular Approach

Teacher's role that of facilitator
Reinforcement primarily from activities
Combines programmed instruction elements with central use of games
Teacher demonstrates games, then gradually withdraws, encouraging children to direct their own learning
Stresses small group interaction of children

Type of Parent Involvment

Encourages parents to participate in the classroom
Provides home visits and workshops so that parents can learn instructional games and play them at home with children

Since Cohort II evidence is based on a single project, summary analysis data are reported only for the Cohort I samples for this sponsor. These results, as presented in Table 82 show significant differences on quantitative skills, parent/school involvement, parent sense of control, and teacher acceptance of the method. The pupil achievement outcome is consistent with the model's emphasis on the development of problem-solving ability, but there is no evidence indicating attainment of the language objectives.

We interpret these Cohort I and Cohort II results for this project as noncontradictory and, perhaps, even compatible. It is wholly possible that the bases for academic and social growth are being developed during the first year or two, and that, consistent with the goals of the model, large performance differences would be expected to accrue only in advanced primary grades.

The parent result is consistent with the model's emphasis on parent participation in the classroom. The teacher approval outcome does suggest that the model is viable and, presumably, fairly well implemented in the projects studied. Overall, these results are favorable, and we interpret them as positive evidence that the approach is meeting many of its objectives. The difficulty with this interpretation is that it is based on evidence from only two projects in the Cohort I-K sample and, hence, cannot be considered conclusive at this point in the evaluation.

TABLE 82

NEW YORK UNIVERSITY SUMMARY, COHORT I, KINDERGARTEN ENTERING PROJECTS: TWO-YEAR EFFECTS, 1969-1971

				ADJUSTED OUTCOME DATA					
	UNADJUSTED MEANS							CONFIDENCE INTERVAL	
OUTCOME MEASURE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
CHILD DATA									
ACHIEVEMENT	122.6	108.3	14.3	119.2	111.7	7.5	5.04	-2.4	17.4
AFFECT	17.2	17.6	-.5	17.9	17.9	.0	.49	-1.0	1.0
WRAT	79.2	65.8	7.1	70.6	67.0	3.6	2.81	-1.9	9.1
QUANTITATIVE	37.0	31.5	5.5	36.1	31.9	4.1	1.61	.9	7.3
COG. PROCESS	6.9	6.9	.0	6.7	7.0	-.2	.29	-.8	.4
READING	53.3	46.3	6.9	51.3	47.9	3.4	2.53	-1.6	8.4
LANGUAGE	25.2	23.6	1.6	25.0	24.8	.2	1.36	-2.5	2.9
PARENT DATA									
PARENT-CHILD	.03	.15	-.12	.02	.13	-.11	.15	-.40	.18
PARENT-SCHOOL	.29	-.20	.49	.27	-.22	.49	.21	.08	.90
CHILD ACADEMIC EXPECTATION	.10	.29	-.19	.15	.32	-.17	.23	-.62	.28
SENSE OF CONTROL	.22	-.27	.49	.22	-.26	.48	.21	.07	.89
TEACHER DATA									
PARENT-EDUCATOR IMAGE	.39	.53	-.14	.33	.46	-.13	.10	-.33	.07
PROFESSION. ACCEPT FT	1.75	1.14	.61	1.89	1.11	.77	.15	.48	1.06

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*See "Guide for Interpretation of Results" for explanation of table entries.

LANGUAGE DEVELOPMENT (BILINGUAL) APPROACH
Southwest Educational Development Laboratory

Sponsor's Intended Approach

The Southwest Educational Development Laboratory model is a bilingual approach first developed for classrooms in which 75 percent of the pupils are Spanish-speaking, but it can be adapted by local school staffs for other population mixes. In all cases the model emphasizes language as the main tool for dealing with environment, expressing feelings, and acquiring skills, including nonlinguistic skills. Pride in cultural background, facility and literacy in both the native language and English, and a high frequency of "success" experiences are all central objectives.

The theory applied by the model is that learning in a second language is easier and more effective if the child first learns concepts in his native language. Step-by-step sequential procedures are followed in teaching language patterns, and both teaching techniques and materials are designed to develop a hierarchy of thinking processes, specific terminology, and symbols. Drills, games, and exercises are used to overcome individual linguistic problems.

Focusing on content in teaching language, all classroom activities reinforce language development. The Kindergarten program concentrates on the following skill areas: visual, auditory, motor, thinking and reasoning, discovering and exploring, and English language structures. Oral communication precedes reading and writing in the First and Second Grades. The responsibility for instruction is on the teacher rather than on specified texts. The Third Grade component of the model serves as a transition, guiding the teacher to adapt standard curricula to the unique needs of the bilingual children, thus preparing them to function effectively in a traditional Fourth Grade.

The model stresses a high degree of adult-child contact. Teachers and aides are constant language models, assuring the child he can succeed and reinforcing him with recognition and praise. Kindergarten classes are usually divided into three or four groups, with the teacher and aide working with one group while the other groups work independently. All groups cover the same material, but those progressing more rapidly are given expanded materials. In the First and Second Grade classes, the teacher presents a lesson to the whole group with visual aids and books, and then the children work in small groups or as individuals with enrichment materials based on the lesson.

Optimal staffing includes a bilingual teacher skilled in the methodology of second-language teaching and a bilingual aide in each classroom. Staff development coordination and evaluation activities are also required of local project staff. Staff development aimed at continuous professional development of district teachers and administrators is a supporting component of the model. Summer training workshops for local Staff Development Coordinators result in ongoing training and assistance at the project site. The Southwest Educational Development Laboratory has designed a series of training modules that include manuals, video tapes, and filmstrips to help teachers implement curriculum materials in a way consistent with the cultural and linguistic needs of the child.

The model seeks to accelerate the child's success at school by encouraging a positive expectation of achievement in the parent, and parents are invited to take part in classroom activities. Parent involvement is regarded as essential, and special materials are available for the parent to use at home to reinforce the child's Kindergarten experience.

During the past three years, the model has been modified and improved on the basis of pupil progress reports, teacher feedback, and other formative evaluation data.

Individual Project Results

Only one project sample for Southwest Educational Development Laboratory (SW) was included in the interim analysis data base. Two-year effects data for this Cohort I project are summarized in Table 83. This moderately large project (854 pupils) is in a large mid-Atlantic urban region (SMSA = 4,021,000). The anticipated per-pupil FT expenditure for this project of $752 is slightly below the overall average, and the pupil/PAC ratio of about 18 to 1 is near average.

Comparison of the eight FT and four NFT classes included in this project analysis shows that the groups lack comparability on baseline scores, ethnic composition, preschool experience for the classrooms, and most parent-level variables. FT pupils averaged substantially below NFT pupils on cognitive process, reading, and language measures. NFT classrooms had higher proportions of Black pupils and lower proportions of preschool experienced pupils. The general pattern of greater disadvantage for FT families also prevailed in this project sample. Indeed, the particular

TABLE 83

PROJECT DATA* TABLE--SOUTHWEST EDUCATIONAL DEVELOPMENT LABORATORY PROJECT, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	8	4	4	OVERALL ACHIEVEMENT	100.9	113.9	-13.0	132.0	107.1	24.9	8.91	7.4	42.4
AVERAGE PUPILS/CLASSROOM	5.3	5.5	-0.2										
QUANT. PRESCORE	18.9	20.8	-1.9	AFFECT	16.6	17.4	-0.8	16.3	18.0	-1.7	0.94	-3.5	.1
COG. PROCESS PRESCORE	1.9	6.2	-4.3										
READING PRESCORE	20.6	37.4	-16.8	ATTENDANCE	22.1	25.0	-2.9	19.6	24.6	-5.0	2.92	-10.7	.7
LANGUAGE PRESCORE	4.8	9.9	-5.1										
AFFECT PRESCORE	16.9	16.0	0.9	WHAT TOTAL	63.9	68.1	-4.2	79.0	64.2	14.8	4.81	5.4	24.2
AGE (JUNE '71)	83.0	84.1	-1.1										
% CLASSROOM MALE	44.7	45.7	-1.0	QUANTITATIVE	34.3	32.8	1.5	43.7	30.4	13.3	2.86	7.7	18.9
% CLASSROOM BLACK	42.6	64.7	-22.1										
% PRESCHOOL (OR NO. MOS.)	56.1	19.6	36.5	COGNITIVE PROCESSES	6.0	7.2	-1.2	6.9	7.1	-0.2	0.53	-1.2	.8
% PARENTS W/O HS DIPL.	64.0	60.4	3.6										
% PARENTS W SKILLED OCCUP.	13.6	25.8	-12.2	READING SKILLS	43.3	49.0	-5.7	55.6	45.8	9.8	4.42	1.1	18.5
% PARENTS BLACK	51.2	69.1	-17.9										
% PARENTS POVERTY ELIGIBLE	84.5	86.0	-1.5	LANGUAGE ARTS	17.3	24.9	-7.6	25.8	23.8	2.0	2.45	-2.8	6.8
% HEAD HOUSEHOLD EMPLOYED	32.7	62.2	-29.5										
% HEAD HOUSEHOLD MALE	40.5	53.3	-12.8										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	7	4	3	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	4.4	5.0	-0.6	INTERACT	-.061	.037	-.098	.142	.062	.080	.273	-.46	.62
% W/O HIGH SCHOOL DIPLOMA	62.4	60.4	2.0										
% W SKILLED OCCUP.	13.6	25.8	-12.2	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	76.4	50.0	26.4	INVOLVE	.187	.286	-.099	.276	.600	-.324	.370	-1.05	.40
% BLACK	58.5	69.0	-10.5										
% REPORTING USE OF PRESCHOOL	54.7	19.7	35.0	CHILD ACADEMIC									
% POVERTY ELIGIBLE	82.3	86.0	-3.7	EXPECT	.291	-.126	.417	.181	.260	-.079	.384	-.83	.67
% HEAD HOUSEHOLD EMPLOYED	37.3	62.2	-24.9										
% HEAD HOUSEHOLD MALE	42.7	53.3	-10.6	SENSE OF CONTROL	-.196	-.557	.361	-.134	-.315	.181	.363	-.53	.89
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	8	4	4	PARENT-EDUCATOR									
JOB SATISF. RATING	1.5	2.1	-0.6	IMAGE	0.53	0.53	0	0.58	0.63	-0.05	0.165	-.37	.27
BOOK RESOURCE SCALE	2.4	3.7	-1.3										
RACE (BLACK/NONBLACK)	0.6	1.0	-0.4	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	0.4	0.7	-0.3	OF METHOD	1.40	1.33	0.07	1.40	1.19	0.21	0.231	-.24	.66
NO. OF HELPERS	1.0	0.3	0.7										
ABLE TO CHOOSE ASSIGNMENT	2.5	1.3	1.2										
TRNG & TEACHER EXPER	5.0	5.3	-0.3										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	4,021,000
PERCENT NONWHITE	34
PROJECT SIZE (PUPILS) . . .	854
NO. PUPILS/PAC MEMBER . . .	17.9
FT PER-PUPIL EXPENDITURE . .	752

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

values for these parent variables (low income, education, and occupational levels, and high proportions of unemployed and female heads of household) indicate that the sample included a large number of broken or father-absent homes. Nevertheless, these FT families rate their child's progress substantially more favorably than do NFT families.

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*See "Guide for Interpretation of Results" for explanation of table entries.

Comparison of means for teacher variables show the FT teachers reported fewer book resources but more helpers, and they apparently had greater freedom to choose assignments than did NFT teachers. The groups were moderately well matched on the training and experience scale.

Results of analysis of pupil outcomes show significant FT-favoring differences on overall achievement and the WRAT total score. The .95 confidence intervals were 7.4 to 42.4 and 5.4 to 24.2 points, respectively. The specific academic areas where these differences appear concentrated are quantitative and reading skills. Neither parent nor teacher program effects reached significance, and since this project was not included in the classroom observation sample, process data are not available to aid in interpreting these results.

Summary

The salient features of the Southwest Educational Development Laboratory (SW) model are summarized as follows:

Focus and Objectives--emphasizes intermediate program objectives

Child

Cognitive
- Develop bilingual competence

Affective
- Increase self-expression
- Develop positive expectation of success

Curricular Approach
- Teacher's role that of facilitator
- Teachers offer reinforcement and do so frequently with recognition and praise
- Small group focus
- Programmed materials used
- Emphasis on high degree of adult-child contact

Type of Parent Involvement
- Urge parents to have expectation of success (achievement) for child
- Parents participate in classroom activities
- Provide special materials for parent use.

These objectives and methods characterize the approach as nontraditional, yet, interestingly enough, the significant results in favor of the model's effectiveness in the single project evaluated are in traditional academic areas of reading and mathematics achievement. There is no independent evidence that the model was implemented as planned, but the model's emphasis on the use of programmed materials, teacher reinforcement, small group instruction and high adult-child interactions appears effective in promoting positive academic growth with these innercity poor children. On the other hand, these results show that the model's emphasis on parental enthusiasm and involvement appears not to have met with success in this project. Moreover, noncognitive objectives involving development of attitudes and aspirations within the children are not evident in these data. One could further argue that teachers do not exhibit strong preferences for this approach. They also do not reflect a particularly positive image of the parents' role in extramural educational activities, as evidenced by the responses to teacher questionnaire variables. This last finding may, in part, be due to the relatively low number of helpers and resources in this project.

Since all the above inferences are based on data from a single sample within a single project, we feel no conclusions can be justified at this time. At best, the model as implemented in this sample project seems to be producing positive achievement gains for pupils.

SELF-SPONSORED AND PARENT-IMPLEMENTED PROJECTS

Sponsor's Intended Approach

Six of the early group of pilot projects that preceded the planned variation phase of Follow Through elected to remain unsponsored. They were the only projects included in this evaluation given this option. They are classified as "self-sponsored" or "parent-implemented" models and have instituted programs that they themselves have developed. Since a variety of different models exist, it is inappropriate to analyze these projects at the sponsor level. Therefore, only project results are presented. Even at this level, interpretation is complicated by a lack of stated objectives. Where significant results have occurred, there is no way to determine whether they are desired results.

Individual Project Results

Twelve samples from six different self-sponsored (SS) or parent-implemented (PI) projects were included in the analysis of interim effects. Of these, five are self-sponsored, and one is parent-implemented. The distribution of these evaluation samples in terms of cohort, outcome, and project is as follows:

Cohort	1st-year Effects	2nd-year Effects
IK	(projects b, c, d, e, and PI)	(projects b, c, d, e, and PI)
IE	(project a)	(project a)

Project SS(a)

Located within an SMSA of 1.2 million people in the south Atlantic region, Project SS(a) is predominantly white and slightly larger than average. The anticipated FT per-pupil expenditure of $732 is slightly below average, and the pupil/PAC ratio was 27.8 to one. As is the case with all other self-sponsored projects, classroom observation data were not collected.

Table 84 presents the two-year impact data and results for Project SS(a), Cohort I-EF. These results are based on five FT and sixteen NFT classrooms. Although, FT and NFT pupils had comparable scores on baseline tests, the large difference in the number of classrooms of each type creates a poor base for comparison. More significantly, the NFT classes were predominantly Black, while FT classes were predominantly non-Black. Also, NFT classes had a higher proportion of boys, and more FT pupils had had preschool experience.

FT and NFT families were more comparable on some socioeconomic variables. Both FT and NFT parents showed low educational attainment, employment in unskilled occupations, high percentages of poverty eligibility, and high percentages of male heads of household. Nevertheless, more NFT parents were employed in skilled occupations than were FT parents, and more NFT heads of household were employed. Both groups responded favorably to the child's academic progress in nearly equal proportions. As noted in the child sample discrepancies, preschool and ethnicity variables differed greatly. FT parents were predominantly white and reported more preschool for their children. Conversely, NFT parents were predominantly Black and reported less preschool. Investigations revealed that the FT families were primarily Spanish speaking (likely Cubans or Puerto Ricans), indicating an additional cultural bias between the two subgroups. However, these differences do not appear to have affected the language performance of the children, since the two groups are nearly equal on language prescore averages.

FT and NFT teachers (four FT, two NFT) were nearly equivalent on variables such as job satisfaction, resources (books and helpers), and experience. However, more FT teachers were Black, fewer lived within the school community, and fewer were allowed to choose their assignments than NFT teachers.

Analysis of covariance on child level outcomes showed a significant difference only for the quantitative measure. The confidence interval indicates a 95 percent probability that the true difference is somewhere between 1.2 and 13.2 units in favor of FT pupils. Although other measures tend to favor FT, none of the differences are significant.

Parent variables indicate a trend that favors the FT group. Differences on the parent/child and parent/school interaction variables reach significance (95 percent confidence interval = .14-1.31 and .23-1.43 respectively). In light of the high number of pupils (27.8) per PAC member, such results are interesting.

TABLE 84

PROJECT DATA TABLE--SELF SPONSORED PROJECT A, COHORT I, ENTERING FIRST GRADE: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	16	-11	OVERALL ACHIEVEMENT	107.6	96.8	10.8	142.1	132.4	9.7	10.13	-10.2	29.6
AVERAGE PUPILS/CLASSROOM	6.2	2.5	3.7										
QUANT. PRESCORE	21.8	22.2	-0.4	AFFECT	19.8	18.4	1.4	19.9	19.1	0.8	0.66	-.5	2.1
COG. PROCESS PRESCORE	4.9	5.1	-0.2										
READING PRESCORE	43.4	45.9	-2.5	ATTENDANCE	13.5	15.8	-2.3	10.1	10.5	-0.4	3.36	-7.0	6.2
LANGUAGE PRESCORE	9.7	9.4	0.3										
AFFECT PRESCORE	17.3	14.4	2.9	WRAT TOTAL	86.8	83.9	2.9	98.3	93.9	4.4	4.36	-4.1	12.9
AGE (JUNE '71)	96.9	96.8	0.1										
% CLASSROOM MALE	36.7	56.2	-19.5	QUANTITATIVE	37.7	29.1	8.6	48.1	40.9	7.2	3.04	1.2	13.2
% CLASSROOM BLACK	20.0	65.9	-45.9										
% PRESCHOOL (OR NO. MOS.)	70.7	36.4	34.3	READING SKILLS	53.5	52.5	1.0	72.9	71.1	1.8	6.72	-11.4	15.0
% PARENTS W/O HS DIPL.	74.2	63.5	10.7										
% PARENTS W SKILLED OCCUP.	26.9	45.9	-19.0	LANGUAGE ARTS	16.5	15.2	1.3	21.2	20.6	0.6	2.01	-3.3	4.5
% PARENTS BLACK	25.0	52.4	-27.4										
% PARENTS POVERTY ELIGIBLE	68.2	74.0	-5.8										
% HEAD HOUSEHOLD EMPLOYED	74.7	92.1	-17.4										
% HEAD HOUSEHOLD MALE	83.0	88.4	-5.4										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	5	9	-4	PARENT-CHILD INTERACT	-.605	-1.028	.423	-.297	-1.020	.723	.299	.14	1.31
AV. PARENTS/CLASSRM GRP	6.2	3.2	3.0										
% W/O HIGH SCHOOL DIPLOMA	74.2	65.0	9.2	PARENT-SCHOOL INVOLVE	.096	-.730	.826	.064	-.768	.832	.305	.23	1.43
% W SKILLED OCCUP.	26.9	45.4	-18.5										
% POS EVAL OF CHILD LRNG	67.4	72.2	-4.8	CHILD ACADEMIC EXPECT	.020	-.153	.173	.047	-.213	.260	.301	-.33	.85
% BLACK	25.0	47.1	-22.1										
% REPORTING USE OF PRESCHOOL	70.7	32.6	38.1	SENSE OF CONTROL	-.070	.188	-.258	.011	-.178	.189	.293	-.39	.76
% POVERTY ELIGIBLE	68.2	76.7	-8.5										
% HEAD HOUSEHOLD EMPLOYED	74.7	91.2	-16.5										
% HEAD HOUSEHOLD MALE	83.0	87.1	-4.1										
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	4	2	2	PARENT-EDUCATOR									
JOB SATISF. RATING	2.0	2.2	-0.2	IMAGE	0.49	0	0.49	0.29	-0.20	0.49	0.258	-.02	1.00
BOOK RESOURCE SCALE	2.2	2.5	-0.3										
RACE (BLACK/NONBLACK)	0.5	0	0.5	PROFESSION. ACCEPT									
IDENT. W. COMMUNITY	0.2	1.5	-1.3	OF METHOD	1.50	1.50	0	1.89	1.71	0.18	0.386	-.58	.94
NO. OF HELPERS	2.0	2.0	0										
ABLE TO CHOOSE ASSIGNMENT	0	1.5	-1.5										
TRNG & TEACHER EXPER	5.8	5.0	0.8										

PROCESS DATA	
PROJECT DESCRIPTORS	
REGION	SOUTH ATLANTIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	1,220,000
PERCENT NONWHITE	23
PROJECT SIZE (PUPILS) . . .	583
NO. PUPILS/PAC MEMBER . . .	27.8
FT PER-PUPIL EXPENDITURE . .	732

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

Neither teacher result reached significance on this project. Since no classroom observation data are available, little can be stated beyond the previously noted control variable pattern at the teacher level. FT teachers scored higher than NFT teachers on both measures. The difference approaches, but does not reach, significance on the parent image variable.

Without knowing the specific objectives of the model, we can only note that two years of implementation show gain for the Follow Through group in child quantitative ability and parent interactions with the child and the school. Such results show that the FT program had some impact. Additional information is needed if this impact is to be further assessed.

The results of the analysis of first-year effects on children in Cohort I-EF are summarized in Table 85. Comparison of the first- and second-year results shows that the FT pupils did make greater gains in Spring, 1971, than in Spring, 1970. All difference favored FT in Spring, 1971, while most differences favored NFT in Spring 1970 (although no Spring 1970 difference reached significance).

Project SS(b)

Project SS(b) is of moderate size and is located within a large urban area in the east north central region. The anticipated FT per-pupil expenditure of $1,183 is well above average, and the project had a lower than average number of pupils (11.4) per PAC member.

Table 86 summarizes the two-year impact data and results for Project SS(b), Cohort I-K. These results are based on four FT and nine NFT classrooms. Aside from a slightly higher proportion of males in the FT child sample and a much higher proportion of FT preschool experience (100 percent), the samples represent a good FT/NFT match. Baseline test measures are nearly equivalent, and children in both groups were predominantly Black.

Values on parent and teacher control variables also suggest a reasonably good FT/NFT match for this project. Parent samples are fairly comparable on percentage with high school diplomas (low), percentage with skilled occupations (low), percentage who were poverty eligibile (high), and percentage with head of household employed (low). The parents were predominantly Black, and most households did not have male heads. Few differences between the two groups of teachers are evident. The FT teachers did have more book resources and were less integrated into their pupils' communities than NFT teachers.

TABLE 85

PROJECT DATA TABLE--SELF SPONSORED PROJECT A, COHORT I, ENTERING FIRST GRADE: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HI
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	5	9	-4	OVERALL ACHIEVEMENT	114.6	117.8	-3.2	126.9	130.7	-3.8	3.59	-10.8	3.2
QUANT. PRESCORE	21.8	23.6	-1.8										
COG. PROCESS PRESCORE	4.9	5.2	-.3	AFFECT	16.8	15.9	.9	18.9	18.4	.5	1.14	-1.7	2.7
READING PRESCORE	43.4	48.9	-5.5										
LANGUAGE PRESCORE	9.7	9.6	.1	ATTENDANCE	13.7	9.4	4.3	7.7	4.3	3.4	3.11	-2.7	9.5
AFFECT PRESCORE	17.3	14.7	-2.6										
AGE (JUNE '71)	96.8	97.1	-.3	WRAT TOTAL	53.2	56.1	-2.9	58.0	61.9	-3.9	2.60	-9.0	1.2
% CLASSROOM MALE	36.7	55.4	-18.7										
% CLASSROOM BLACK	20.0	67.2	-47.2	QUANTITATIVE	31.0	31.8	-.8	34.3	35.9	-1.6	1.10	-3.8	.6
% PRESCHOOL (OR NO. MOS.)	70.7	31.4	39.3										
% PARENTS W/O HS DIPL.	74.2	65.0	9.2	COGNITIVE PROCESSES	7.8	7.8	0	8.6	8.9	-.3	.410	-1.1	.5
% PARENTS W/SKILLED OCCUP.	26.9	45.4	-18.5										
% PARENTS BLACK	25.0	52.7	-27.7	READING SKILLS	61.7	64.6	-2.9	67.8	70.7	-2.9	2.85	-8.5	2.7
% PARENTS POVERTY ELIGIBLE	68.2	71.1	-2.9										
% HEAD HOUSEHOLD EMPLOYED	74.7	91.2	-16.5	LANGUAGE ARTS	14.1	13.5	.6	16.1	14.9	1.2	.75	-.3	2.7
% HEAD HOUSEHOLD MALE	83.0	87.1	-4.1										

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[*] See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 86

PROJECT DATA TABLE--SELF SPONSORED PROJECT B, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971*

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	5	-1	OVERALL ACHIEVEMENT	120.2	115.4	4.8	122.7	114.7	8.0	7.94	-7.6	23.6
AVERAGE PUPILS/CLASSROOM	14.5	5.9	8.6										
QUANT. PRESCORE	19.4	19.1	0.3	AFFECT	17.7	17.1	0.6	17.5	17.6	-0.1	0.84	-1.7	1.5
COG. PROCESS PRESCORE	5.4	5.9	-0.5										
READING PRESCORE	26.3	26.6	-0.3	ATTENDANCE	7.4	18.0	-10.6	7.3	19.3	-12.0	2.60	-17.1	-6.9
LANGUAGE PRESCORE	9.7	9.0	0.7										
AFFECT PRESCORE	16.0	14.7	1.3	MAT TOTAL	75.9	74.8	1.1	77.3	73.9	3.4	4.29	-5.0	11.8
AGE (JUNE '71)	64.3	65.5	-1.2										
% CLASSROOM MALE	46.1	37.4	8.7	QUANTITATIVE	28.6	26.5	2.1	41.4	37.7	3.7	2.55	-1.3	8.7
% CLASSROOM BLACK	91.4	100.0	-8.6										
% PRESCHOOL (OR EQ. EXP.)	100.0	55.6	44.4	COGNITIVE PROCESSES	7.3	6.9	0.4	7.5	6.9	0.6	0.46	-.3	1.5
% PARENTS W/O HS DIPL.	60.2	72.8	-12.6										
% PARENTS W SKILLED OCCUP.	28.3	40.5	-12.2	READING SKILLS	16.0	14.4	1.6	17.1	14.0	3.1	3.84	-4.4	10.6
% PARENTS BLACK	90.1	100.0	-9.9										
% PARENTS POVERTY ELIGIBLE	80.3	76.9	3.4	LANGUAGE ARTS	20.0	20.7	-0.7	20.8	20.1	0.7	2.19	-3.6	5.0
% HEAD HOUSEHOLD EMPLOYED	51.3	56.0	-4.7										
% HEAD HOUSEHOLD MALE	44.4	36.4	8.0										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	4	7	-3										
AV. PARENTS/CLASSRM GRP	12.5	6.9	5.6	PARENT-CHILD INTERACT	-.055	-.321	.266	.097	-.276	.373	.269	-.15	.90
% W/O HIGH SCHOOL DIPLOMA	60.2	72.8	-12.6										
% W SKILLED OCCUP.	28.3	40.5	-12.2										
% POS EVAL OF CHILD LRNG	83.4	78.6	4.8	PARENT-SCHOOL INVOLVE	.414	-.158	.572	.118	-.238	.356	.364	-.36	1.07
% BLACK	90.1	100.0	-9.9										
% REPORTING USE OF PRESCHOOL	100.0	66.7	33.3										
% POVERTY ELIGIBLE	80.3	76.9	3.4	CHILD ACADEMIC EXPECT	.387	-.073	.460	.412	.126	.286	.377	-.45	1.02
% HEAD HOUSEHOLD EMPLOYED	51.3	56.0	-4.7										
% HEAD HOUSEHOLD MALE	44.4	36.4	8.0	SENSE OF CONTROL	.432	-.311	.743	.240	-.404	.644	.357	-.06	1.34
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	4	4	0										
JOB SATISF. RATING	2.2	1.7	0.5	PARENT-EDUCATOR IMAGE	0.36	0.38	-0.02	0.29	0.37	-0.08	0.180	-.43	.27
BOOK RESOURCE SCALE	3.5	2.0	1.5										
RACE (BLACK/NONBLACK)	0.5	0.4	0.1										
IDENT. W. COMMUNITY	0.7	1.3	-0.6	PROFESSION. ACCEPT OF METHOD	1.25	1.50	-0.25	1.13	1.39	-0.26	0.251	-.75	.23
NO. OF HELPERS	1.4	1.2	0.2										
ABLE TO CHOOSE ASSIGNMENT	1.7	1.7	0										
TRNG & TEACHER EXPER	5.7	5.3	0.4										

PROCESS DATA

PROJECT DESCRIPTORS

REGION	EAST NORTH CENTRAL
DISTANCE TO NEAREST SMSA .	WITHIN
SIZE OF NEAREST SMSA . . .	2,071,000
PERCENT NONWHITE	43
PROJECT SIZE (PUPILS) . . .	600
NO. PUPILS PAC MEMBER . .	11.4
FT PER-PUPIL EXPENDITURE .	1,163

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

Outcome analyses for pupil measures reveal significance only for attendance, which is FT-favoring. Although FT classes tended to score higher than NFT classes on basic skill measures, none of these differences reached significance. Moreover, none of the variables on either the parent or the teacher impact analyses reached significance. This lack of clear evidence of impact suggests that this project was not very effective, in spite of its high expenditures and large PAC.

Table 87 presents the results of the one-year effects analysis on children in Cohort I. At the end of one year of FT experience, significant FT-favoring differences were found on measures of achievement, affect, quantitative, and language. The 95 percent confidence interval for achievement ranges from .8 to 22.4 units; for affect, from .5 to 5.4; for quantitative, from .2 to 6.4; and, for language, from .4 to 3.6 units. Just why this sample failed to maintain its growth rate is far from clear. Perhaps changes took place within the project, or perhaps the methods employed produce only short-term gains. Without additional data, only speculative explanations can be offered.

Project SS(c)

Project SS(c) is a very large FT program located in a large city (population 4 million) in the middle Atlantic region. The anticipated FT per-pupil expenditure of $631 is below average, and there was a slightly below average number of pupils (12.2) per PAC member.

Table 88 summarizes the two-year results for Cohort I-K. These results are based on twelve FT and seven NFT classrooms. Although FT classes are slightly higher than NFT classes on baseline test averages and preschool experience, the groups are highly comparable on all other variables. The two samples have approximately the same distribution of boys and girls. Children in the groups were about the same age and were predominantly Black.

Both parent groups were predominantly Black and few parents in either group had high school diplomas. Most parents in both groups listed unskilled occupations, and a high proportion of both were poverty eligible. Although a slightly higher percentage of Follow Through parents had high school diplomas and a smaller percentage were poverty eligible, FT parents were more likely to be employed than NFT parents, but NFT parents were more likely to have a skilled occupation. In addition, a higher percentage of FT households had male heads. Although those differences that do exist favor FT, the groups were socioeconomically similar enough to indicate comparability. Teacher data for this project were insufficient for analysis.

TABLE 87

PROJECT DATA TABLE--SELF SPONSORED PROJECT B, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	8	-4	OVERALL ACHIEVEMENT	106.6	91.7	14.9	104	92.4	11.6	5.52	,8	22.4
QUANT. PRESCORE	19.8	19.0	.8										
COG. PROCESS PRESCORE	5.4	5.5	-.1	AFFECT	17.7	14.6	3.1	17.7	14.8	2.9	1.25	.5	5.4
READING PRESCORE	38.3	37.7	.6										
LANGUAGE PRESCORE	9.7	9.0	.7	ATTENDANCE	14.2	14.1	.1	12.6	13.3	-.7	3.65	-7.9	6.5
AFFECT PRESCORE	16.0	14.5	1.5										
AGE (JUNE '71)	84.3	86.1	-1.8	WRAT TOTAL	50.3	43.2	7.1	48.8	44.1	4.7	3.14	-1.5	10.9
% CLASSROOM MALE	46.5	42.5	4.0										
% CLASSROOM BLACK	91.4	100	-8.6	QUANTITATIVE	27.7	23.9	3.8	27.8	24.5	3.3	1.60	.2	6.4
% PRESCHOOL (OR NO. MOS.)	100	62.5	37.5										
% PARENTS W/O HS DIPL.	60.3	72.9	-12.6	COGNITIVE PROCESSES	7.3	6.8	.5	7.5	7.0	.5	.53	-.5	1.5
% PARENTS W/SKILLED OCCUP.	28.3	40.5	-12.2										
% PARENTS BLACK	90.1	100	-9.9	READING SKILLS	58.1	49.8	8.3	55.6	50.0	5.6	3.77	-1.8	13.0
% PARENTS POVERTY ELIGIBLE	80.4	77	3.4										
% HEAD HOUSEHOLD EMPLOYED	51.3	56	-4.7	LANGUAGE ARTS	13.4	11.2	2.2	13.2	11.2	2.0	.81	.4	3.6
% HEAD HOUSEHOLD MALE	44.4	36.4	8.0										

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* See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 88

PROJECT DATA TABLE--SELF SPONSORED PROJECT C, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

PART I CHILD EVALUATION DATA

BASELINE CONTROL DATA VARIABLE	PT	NPT	DIFF	OUTCOME DATA VARIABLE	PT	NPT	DIFF	ADJUSTED OUTCOME DATA PT	NPT	DIFF	S. E.	CONFIDENCE INTERVAL LOW	HIGH
NO. OF CLASSROOMS	12	7	5	OVERALL ACHIEVEMENT	133.0	116.8	16.2	146.5	132.2	14.3	6.47	1.6	27.0
AVERAGE PUPILS/CLASSROOM	10.8	8.2	2.6										
QUANT. PRESCORE	17.4	16.7	0.7	AFFECT	17.2	16.6	0.6	17.1	16.6	0.5	0.60	-.8	1.8
COG. PROCESS PRESCORE	5.0	3.1	1.9										
READING PRESCORE	26.0	25.6	0.4	ATTENDANCE	9.9	14.3	-4.4	11.0	14.0	-3.0	2.12	-6.0	.4
LANGUAGE PRESCORE	8.2	7.4	0.8										
AFFECT PRESCORE	16.3	14.4	1.9	WRAT TOTAL	80.4	71.3	9.1	85.3	76.9	8.6	3.50	2.7	14.5
AGE (JUNE '71)	82.4	82.9	-0.5										
% CLASSROOM MALE	48.5	47.6	0.9	QUANTITATIVE	39.5	36.2	3.3	43.7	41.3	2.4	2.08	-1.7	6.5
% CLASSROOM BLACK	100.0	99.0	1.0										
% PRESCHOOL (OR NO. MOS.)	50.8	45.3	5.5	COGNITIVE PROCESSES	7.3	7.0	0.3	7.7	7.6	0.1	0.39	-.7	.9
% PARENTS W/O HS DIPL.	61.5	76.4	-14.9										
% PARENTS W/SKILLED OCCUP.	33.0	48.5	-15.5	READING SKILLS	58.7	49.7	9.0	64.6	55.8	8.8	3.21	2.5	15.1
% PARENTS BLACK	98.8	100.0	-1.2										
% PARENTS POVERTY ELIGIBLE	67.1	82.2	-15.1	LANGUAGE ARTS	27.6	23.9	3.7	30.4	27.5	2.9	1.70	-.6	6.4
% HEAD HOUSEHOLD EMPLOYED	63.8	41.0	22.8										
% HEAD HOUSEHOLD MALE	52.4	44.9	7.5										

PART II PARENT EVALUATION DATA

BASELINE CONTROL DATA VARIABLE	PT	NPT	DIFF	OUTCOME DATA VARIABLE	PT	NPT	DIFF	ADJUSTED OUTCOME DATA PT	NPT	DIFF	S. E.	CONFIDENCE INTERVAL LOW	HIGH
NO. CLASSROOM GROUPS	12	7	5	PARENT-CHILD									
AV. PARENTS/CLASSRM GRP	8.5	6.9	1.6	INTERACT	-.010	-.037	.028	-.060	-.029	-.030	.200	-.44	.38
% W/O HIGH SCHOOL DIPLOMA	61.5	76.4	-14.9										
% W/SKILLED OCCUP.	33.0	48.5	-15.5	PARENT-SCHOOL									
% POS EVAL OF CHILD LRNG	84.3	82.7	1.6	INVOLVE	-.411	-.255	-.156	-.456	-.280	-.166	.277	-.72	.35
% BLACK	98.8	100.0	-1.2										
% REPORTING USE OF PRESCHOOL	50.8	45.3	5.5	CHILD ACADEMIC									
% POVERTY ELIGIBLE	67.1	82.2	-15.1	EXPECT	.094	-.038	.132	.208	.189	.019	.287	-.54	.58
% HEAD HOUSEHOLD EMPLOYED	63.8	41.0	22.8										
% HEAD HOUSEHOLD MALE	52.4	44.9	7.5	SENSE OF CONTROL	-.053	.209	-.262	-.171	.193	-.364	.272	-.90	.17

PROCESS DATA

PROJECT DESCRIPTORS

REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	4,021,000
PERCENT NONWHITE	34
PROJECT SIZE (PUPILS) . . .	1,110
NO. PUPILS/PAC MEMBER . . .	12.2
FT PER-PUPIL EXPENDITURE . .	631

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

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*See "Guide for Interpretation of Results" for explanation of table entries.

Analysis of child outcomes showed significant FT/NFT differences on three measures--achievement, the WRAT, and reading--all in favor of FT. The 95 percent confidence interval for achievement ranges from 1.6 to 27.0 units; for the WRAT, from 2.7 to 16.5; and, for reading, from 2.5 to 15.1 units. The overall trend was FT-favoring on all variables.

Program impact on parents failed to reach significance. In fact, FT parents scored lower than NFT parents on all measures except parent expectation. This result is consistent with the FT parents' positive attitude about their children's academic progress shown on baseline scores.

Analysis of the one-year Cohort I-K effects on children (Table 89) shows a progressive gain for the FT groups between Spring 1970 and Spring 1971. At the end of the first year of experience, the FT classes were below the NFT classes on all but the cognitive process measure. In fact, the affect measure showed a significant difference in favor of the NFT group. Another year's experience produced not only FT-favoring results, but also significant differences favoring FT on achievement, the WRAT, and reading.

Since we do not know the specific instructional components or procedures associated with the project, we can only speculate about the reasons for its apparent success. The FT per-pupil expenditure on this project was below average. Perhaps the high degree of PAC participation was an important factor.

Project SS(d)

Project SS(d) is located in a city of moderate size (825,000) in the Pacific region. This relatively large project anticipated a below average FT per-pupil expenditure of $513 and a large number (56) of pupils per PAC member.

Table 90 presents the two-year results for Cohort I-K in Project SS(d). These results are based on twelve FT and seven NFT classrooms. Although pupils in both FT and NFT classes were predominantly Black and about the same age, the FT classes show a slightly higher proportion of boys and preschool experience more than four times greater than that of the NFT group. More importantly, the FT group scored higher on all baseline measures, particularly the reading and quantitative factors. This discrepancy indicates that the incoming abilities of the two groups were not comparable.

TABLE 89

PROJECT DATA TABLE--SELF SPONSORED PROJECT C, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS,
1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	12	7	5	OVERALL ACHIEVEMENT	92.9	87.5	5.4	98.7	100.9	-2.2	4.69	-11.4	7.0
QUANT. PRESCORE	17.4	16.7	.7										
COG. PROCESS PRESCORE	5.0	3.2	1.8	AFFECT	15.6	16.9	-1.3	16.0	18.5	-2.5	1.06	-4.6	-.4
READING PRESCORE	26.0	25.6	.4										
LANGUAGE PRESCORE	8.2	7.4	.8	ATTENDANCE	21.0	21.8	-.8	19.3	16.0	3.3	3.10	-2.8	9.4
AFFECT PRESCORE	16.3	14.4	1.9										
AGE (JUNE '71)	82.4	82.9	-.5	WRAT TOTAL	42.5	40.8	1.7	45.9	46.3	-.4	2.67	-5.6	4.8
% CLASSROOM MALE	48.5	47.6	.9										
% CLASSROOM BLACK	100	99	1.0	QUANTITATIVE	25.8	24.1	1.7	27.0	27.9	-.9	1.36	-3.6	1.8
% PRESCHOOL (OR NO. MOS.)	50.8	45.3	5.5										
% PARENTS W/O HS DIPL.	61.5	76.4	-14.9	COGNITIVE PROCESSES	7.2	6.3	.9	7.7	7.5	.2	.45	-.7	1.1
% PARENTS W/SKILLED OCCUP.	33	48.5	-15.5										
% PARENTS BLACK	98.8	100	-1.2	READING SKILLS	47.5	45.5	2.0	51.5	52.5	-1.0	3.20	-7.3	5.3
% PARENTS POVERTY ELIGIBLE	67.1	82.1	-15.1										
% HEAD HOUSEHOLD EMPLOYED	63.8	41	22.8	LANGUAGE ARTS	12.4	11.3	1.1	12.8	12.9	-.1	.69	-1.5	1.3
% HEAD HOUSEHOLD MALE	52.4	44.9	7.5										

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* See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 90

PROJECT DATA TABLE--SELF SPONSORED PROJECT D, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME						PROCESS DATA
												CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	12	7	5	OVERALL ACHIEVEMENT	132.2	121.9	10.3	118.5	129.6	-11.1	6.88	-24.6	2.4	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	6.5	5.4	1.1											
QUANT. PRESCORE	25.6	17.0	8.6	AFFECT	18.3	17.8	0.5	17.8	18.3	-0.5	0.72	-1.9	.9	REGION . . . . PACIFIC
COG. PROCESS PRESCORE	6.3	5.0	1.3											
READING PRESCORE	40.4	27.8	12.6	ATTENDANCE	9.9	10.4	1.5	9.3	11.2	-1.9	2.25	-6.3	2.5	DISTANCE TO NEAREST SMSA . . . WITHIN
LANGUAGE PRESCORE	11.2	7.9	3.3											
AFFECT PRESCORE	16.4	14.7	1.7	WRAT TOTAL	71.8	72.3	-0.5	69.0	76.3	-7.3	3.72	-14.8	-.2	SIZE OF NEAREST SMSA 823,000
AGE (JUNE '71)	66.3	63.9	2.4											
% CLASSROOM MALE	55.6	46.1	9.5	QUANTITATIVE	42.1	38.2	3.9	37.7	40.9	-3.2	2.33	-7.5	1.1	PERCENT NONWHITE 8
% CLASSROOM BLACK	71.6	77.1	-5.5											
% PRESCHOOL (GE NO. MOS.)	86.4	20.8	65.6	COGNITIVE PROCESSES	7.4	6.9	0.5	6.9	7.3	-0.4	0.41	-1.2	.4	PROJECT SIZE (PUPILS) 970
% PARENTS W/O HS DIPL.	42.7	45.7	-3.0											
% PARENTS W/SKILLED OCCUP.	34.9	19.7	15.1	READING SKILLS	34.2	32.8	1.4	49.0	55.7	-6.7	3.41	-13.4	-.02	NO. PUPILS/PAC MEMBER 36
% PARENTS BLACK	70.9	90.1	-19.2											
% PARENTS POVERTY ELIGIBLE	55.6	61.3	-5.7	LANGUAGE ARTS	28.5	23.6	4.9	25.0	25.5	-0.5	1.90	-4.2	3.2	FT PER-PUPIL EXPENDITURE . . . 313
% HEAD HOUSEHOLD EMPLOYED	61.4	67.0	-5.6											
% HEAD HOUSEHOLD MALE	49.6	58.1	-9.5												CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT
				PART II PARENT EVALUATION DATA										
NO. CLASSROOM GROUPS	12	7	5	PARENT-CHILD INTERACT	-.029	-.067	.038	.028	-.152	.181	.224	-.26	.62	
AV. PARENTS/CLASSRM GRP	5.7	4.1	1.6											
% W/O HIGH SCHOOL DIPLOMA	42.7	45.7	-3.0	PARENT-SCHOOL INVOLVE	-.045	-.380	.335	-.245	-.247	.002	.302	-.59	.60	
% W/SKILLED OCCUP.	34.9	19.7	15.2											
% PAR EVAL OF CHILD LANG	64.4	37.2	27.2	CHILD ACADEMIC EXPECT	-.399	-.377	.776	.238	.074	.162	.311	-.45	.78	
% BLACK	70.9	90.1	-19.2											
% REPORTING USE OF PRESCHOOL	86.5	24.3	62.2	SENSE OF CONTROL	-.121	-.733	.612	-.241	-.483	.436	.297	-.14	1.02	
% POVERTY ELIGIBLE	55.6	61.3	-5.7											
% HEAD HOUSEHOLD EMPLOYED	61.4	67.0	-5.6											
% HEAD HOUSEHOLD MALE	48.6	58.1	-9.5											
				PART III TEACHER EVALUATION DATA										
NO. OF CLASSROOMS	9	3	6	PARENT-EDUCATOR										
JOB SATISF. RATING	1.9	1.8	0.1	IMAGE	0.25	0.29	-0.04	0.28	0.31	-0.03	0.108	-.24	.18	
BOSS RESOURCE SCALE	3.0	4.0	-1.0											
RACE (BLACK/NONBLACK)*	1.0	1.0	0	PROFESSION.ACCEPT										
IDENT. W. COMMUNITY	0.8	0.1	0.7	OF METHOD	1.69	1.09	0.60	1.96	1.16	0.80	0.224	.34	1.26	
NO. OF HELPERS	1.6	1.7	-0.1											
ABLE TO CHANGE ASSIGNMENT	2.1	2.5	-0.4											
TRNG & TEACHER EXPER	4.9	4.0	0.9											

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*See "Guide for Interpretation of Results" for explanation of table entries.

These groups were somewhat more comparable on parent factors. Both were primarily Black with unskilled occupations, fairly low educational attainment, moderately high poverty eligibility, and high unemployment. The NFT sample contained a higher percentage of Black parents. The groups also differed on presence of a male as head of household; there was a higher percentage in the NFT families.

FT and NFT teachers were nearly equal on rated job satisfaction, amount of resources (books and helpers), residence outside the school community, freedom to choose assignment, and number of years of combined training and teaching experience.

Outcome analyses for pupil measures reveal significant differences on the WRAT and reading scores in favor of NFT. The 95 percent confidence interval for the WRAT ranges from -14.8 to -.2 units, and for reading, from -13.4 to -.02 units. In light of the baseline bias in favor of FT, such results are more than indicative of lack of program impact at the end of the two-year experience. The low FT per-pupil expenditure could be associated with this result.

Analyses of parent and teacher data indicate FT-favoring trends. However, the only measure showing significant difference was acceptance of method, which showed that the FT teachers were more approving of their methods than were NFT teachers. This result is somewhat confusing, since evidence that these methods had impact on FT pupils is lacking.

Analysis of the one-year Cohort I-K child data (Table 91) shows evidence of a progressive deficit for the FT group between Spring 1970, and Spring 1971. In the first year, FT pupils scored lower than NFT pupils only on the affect and language measures. Since process data were not collected on this sample, we are unable to offer reasons for this reversal of outcomes over the two-year period.

Project SS(e)

Project SS(e) is a large project in a large West Coast city. The projected per-pupil expenditure of $698 and PAC involvement (1 per 27 pupils) are considered below average.

Table 92 summarizes the two-year results for the eight FT and the six NFT classrooms included in the project sample. Table 93 summarizes first-year results. Except that more than four times as many FT pupils had preschool experience as NFT pupils, the groups are moderately comparable. Baseline test scores were nearly equivalent, and classroom compositions were similar.

TABLE 91

PROJECT DATA TABLE--SELF SPONSORED PROJECT D, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	12	7	5	OVERALL ACHIEVEMENT	114.4	90.8	23.6	99.9	94.7	5.2	4.99	-4.6	15.0
QUANT. PRESCORE	25.7	17	8.7										
COG. PROCESS PRESCORE	6.3	5.0	1.3	AFFECT	16.8	15.1	1.7	15.3	16.0	-.7	1.13	-2.9	1.5
READING PRESCORE	40.4	27.8	12.6										
LANGUAGE PRESCORE	11.2	7.9	3.3	ATTENDANCE	16.8	26.5	09.7	18.4	25.9	-7.5	3.30	-14.0	1.0
AFFECT PRESCORE	16.4	14.7	1.7										
AGE (JUNE '71)	86.3	83.9	2.4	WRAT TOTAL	51.7	40.5	11.2	45.1	43.3	1.8	2.84	-3.8	7.4
% CLASSROOM MALE	55.6	46.1	9.5										
% CLASSROOM BLACK	71.6	77.1	-5.5	QUANTITATIVE	32.6	25.3	7.3	28.2	26.3	1.9	1.45	-.9	4.7
% PRESCHOOL (OR NO. MOS.)	86.4	20.8	65.6										
% PARENTS W/O HS DIPL.	42.7	45.7	-3.0	COGNITIVE PROCESSES	8.5	7	1.5	7.4	7.0	.4	.48	-.5	1.3
% PARENTS W/SKILLED OCCUP.	34.9	19.7	15.2										
% PARENTS BLACK	70.9	90.1	-19.2	READING SKILLS	59.6	47.2	12.4	52.4	49.7	2.7	3.41	-4.0	9.4
% PARENTS PROVERTY ELIGIBLE	55.6	61.3	-5.7										
% HEAD HOUSEHOLD EMPLOYED	61.4	67	-5.6	LANGUAGE ARTS	13.7	11.7	2.0	11.7	12.3	-.6	.74	-2.1	.9
% HEAD HOUSEHOLD MALE	48.6	58.1	-9.5										

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*See "Guide for Intrepretation of Results" for explanation of table entries.

TABLE 92

PROJECT DATA TABLE—SELF SPONSORED PROJECT E, COHORT I, KINDERGARTEN ENTERING: TWO-YEAR EFFECTS, 1969–1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA						PROCESS DATA
												CONFIDENCE INTERVAL		
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH	
				PART I CHILD EVALUATION DATA										
NO. OF CLASSROOMS	8	6	2	OVERALL ACHIEVEMENT	131.9	138.4	-6.5	132.7	143.4	-10.7	7.45	-25.3	3.9	PROJECT DESCRIPTORS
AVERAGE PUPILS/CLASSROOM	15.6	4.5	11.1											
QUANT. PRESCORE	20.3	18.3	2.0	AFFECT	17.8	17.9	-0.1	17.5	18.1	-0.6	0.78	-2.1	.9	REGION . . . . PACIFIC
COG. PROCESS PRESCORE	5.5	4.6	0.9											
READING PRESCORE	36.9	29.9	7.0	ATTENDANCE	13.1	5.0	8.1	12.6	5.2	7.4	2.44	2.6	12.2	DISTANCE TO NEAREST SMSA . . WITHIN
LANGUAGE PRESCORE	9.8	8.6	1.2											
AFFECT PRESCORE	16.7	15.7	1.0	WRAT TOTAL	79.5	83.5	-4.0	79.9	86.0	-6.1	4.02	-14.0	1.8	SIZE OF NEAREST SMSA 1,198,000
AGE (JUNE '71)	84.4	83.8	0.6											
% CLASSROOM MALE	49.1	56.2	-7.1	QUANTITATIVE	39.4	39.9	-0.5	39.5	41.4	-1.9	2.40	-6.6	2.8	PERCENT NONWHITE 11
% CLASSROOM BLACK	78.8	70.8	8.0											
% PRESCHOOL (OR NO. MOS.)	79.0	16.7	62.3	COGNITIVE PROCESSES	6.9	7.2	-0.3	6.9	7.3	-0.4	0.45	-1.3	.5	PROJECT SIZE (PUPILS) . . . 672
% PARENTS W/O HS DIPL.	51.1	65.0	13.9											
% PARENTS W/SKILLED OCCUP.	28.6	36.7	-8.1	READING SKILLS	58.8	61.6	-2.8	58.9	63.8	-4.9	3.69	-12.1	2.3	NO. PUPILS/PAC NUMBER . . . 27.0
% PARENTS BLACK	80.6	60.0	20.6											
% PARENTS POVERTY ELIGIBLE	73.6	58.3	15.3	LANGUAGE ARTS	26.8	29.6	-2.8	27.3	30.7	-3.4	2.05	-7.4	.6	FT PER-PUPIL EXPENDITURE . . 698
% HEAD HOUSEHOLD EMPLOYED	54.8	65.0	-10.2											
% HEAD HOUSEHOLD MALE	52.9	85.0	-32.1											
				PART II PARENT EVALUATION DATA										CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT
NO. CLASSROOM GROUPS	8	4	4	PARENT-CHILD INTERACT	-.071	.136	-.207	.014	.084	-.070	.278	-.61	.47	
AV. PARENTS/CLASSRM GRP	8.6	2.8	5.8											
% W/O HIGH SCHOOL DIPLOMA	51.1	72.9	-21.8	PARENT-SCHOOL INVOLVE	-.161	-.211	.050	-.346	.081	-.426	.376	-1.16	.31	
% W/SKILLED OCCUP.	28.6	20.8	7.8											
% POS EVAL OF CHILD LANG	83.0	58.3	24.7	CHILD ACADEMIC EXPECT	.354	.337	.017	.322	.659	-.337	.389	-1.10	.43	
% BLACK	80.7	66.7	14.0											
% REPORTING USE OF PRESCHOOL	79.0	15.6	63.4	SENSE OF CONTROL	-.237	-.026	-.211	-.356	.159	-.515	.388	-1.24	.21	
% POVERTY ELIGIBLE	73.6	56.2	17.4											
% HEAD HOUSEHOLD EMPLOYED	54.8	72.9	-18.1											
% HEAD HOUSEHOLD MALE	52.9	81.2	-28.3											

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*See "Guide for Interpretation of Results" for explanation of table entries.

TABLE 93

PROJECT DATA TABLE--SELF-SPONSORED PROJECT E, COHORT I, KINDERGARTEN ENTERING: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	8	5	3	OVERALL ACHIEVEMENT	112.7	104.2	8.5	108.6	105.6	3.0	5.39	-7.6	13.6
QUANT. PRESCORE	20.3	19.0	1.3										
COG. PROCESS PRESCORE	5.5	5.1	.4	AFFECT	17.5	15.9	1.6	17.2	15.5	1.7	1.22	-.7	4.1
READING PRESCORE	36.9	30.6	6.3										
LANGUAGE PRESCORE	9.8	8.5	1.3	ATTENDANCE	11.0	9.9	1.1	10.7	12.4	-1.7	3.56	-8.7	5.3
AFFECT PRESCORE	16.7	16.2	.5										
AGE (JUNE '71)	84.4	83.8	.6	WRAT TOTAL	52.5	47	5.5	50.4	47.9	2.5	3.07	-3.5	8.5
% CLASSROOM MALE	49.1	67.5	-18.4										
% CLASSROOM BLACK	78.8	65	13.8	QUANTITATIVE	29.2	28.4	.8	28.5	28.3	.2	1.56	-2.9	3.3
% PRESCHOOL (OR NO. MOS.)	79	20	59.0										
% PARENTS W/O HS DIPL.	51.1	65	-13.9	COGNITIVE PROCESSES	8	8	0	8.0	7.9	.1	.52	-.9	1.1
% PARENTS W/SKILLED OCCUP.	28.6	36.7	-8.1										
% PARENTS BLACK	80.6	60	20.6	READING SKILLS	61.9	54.7	7.2	58.9	55.7	3.2	3.68	-4.0	10.4
% PARENTS POVERTY ELIGIBLE	73.7	58.4	15.3										
% HEAD HOUSEHOLD EMPLOYED	54.8	65	-10.2	LANGUAGE ARTS	13.6	13.4	.2	13.2	13.8	-.6	.79	-2.2	1.0
% HEAD HOUSEHOLD MALE	52.9	85	-32.1										

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*See "Guide for Interpretation of Results" for explanation of table entries.

The samples are somewhat less comparable in terms of family variables. FT parents were more likely to have a high school education, list unskilled occupations, be unemployed, and be poverty eligible than were NFT parents. While both FT and NFT households were characterized by male heads, the proportion was much higher for NFT households.

First-year results reveal no significant differences in child outcome measures. The only significant difference in the second-year outcomes for the two groups of children was in attendance. Unlike the primarily FT-favoring differences in the first-year results this attendance difference and differences in all other second-year child outcome measures favored the NFT sample. Teacher data were insufficient to support analyses for this project. No parent outcomes reached significance.

This project failed to demonstrate positive FT impact. Since process data are unavailable, any interpretation would be merely speculative.

Project PI

This project is the only parent-implemented project included in this interim report. It is a small project located in a large urban setting (population 4 million) in the middle Atlantic region. The anticipated FT per-pupil expenditure is below average and the pupil/PAC ratio of 15 is near average.

Two-year data for the Cohort I-K group in this project are summarized in Table 94. These four FT and three NFT classrooms appear comparable on the basis of pupil measures and classroom composition.

Although neither FT nor NFT parents were highly educated and both groups were underemployed, the NFT parents appear to be at a much lower socioeconomic level than the FT parents. Almost twice as many NFT parents were poverty eligible. In addition, NFT parents were much more likely to be unemployed, and a much higher percentage of NFT households lacked male heads.

On the other hand, teacher data show FT/NFT similarities in terms of job satisfaction, ethnicity, residence outside the school community, freedom to choose assignment, and training and experience. However, while FT teachers tended to have more helpers in their classrooms, NFT teachers tended to have more book resources available.

Analysis of pupil outcomes fails to indicate significant FT/NFT differences, but all differences favor the FT classes. Analyses of parent

TABLE 94

PROJECT DATA TABLE--PARENT IMPLEMENTED PROJECT, COHORT I, DISADVANTAGED ENTERING. TWO-YEAR EFFECTS, 1969-1971

BASELINE CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA				CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				PART I CHILD EVALUATION DATA									
NO. OF CLASSROOMS	4	3	1	OVERALL ACHIEVEMENT	119.1	104.1	15.0	134.9	122.2	12.7	10.28	-7.4	32.8
AVERAGE PUPILS/CLASSROOM	13.3	6.3	7.0										
QUANT. PRETEST	17.8	17.6	0.2	AFFECT	16.9	15.5	1.4	16.7	15.1	1.6	1.10	-.6	3.8
COG. PROCESS PRETEST	5.6	3.3	2.3										
READING PRETEST	22.5	25.5	-3.0	ATTENDANCE	8.2	13.6	-5.4	10.0	12.7	-2.7	2.86	-8.3	2.9
LANGUAGE PRETEST	8.8	8.0	0.8										
AFFECT PRETEST	13.2	13.2	0	WRAT TOTAL	72.6	64.3	8.3	80.0	71.8	8.2	5.24	-2.7	18.1
AGE (JUNE '71)	62.3	63.9	-1.6										
% CLASSROOM MALE	48.7	40.3	8.4	QUANTITATIVE	26.1	22.5	3.6	22.3	20.2	2.1	2.80	-3.4	7.6
% CLASSROOM BLACK	100.0	100.0	0										
% PRESCHOOL (OVER NO. MOS.)	57.0	87.5	-30.5	COGNITIVE PROCESSES	6.7	6.7	0	7.5	7.4	0.1	0.65	-1.2	1.3
% PARENTS W/O HS DIPL.	74.4	71.0	3.4										
% PARENTS W/SKILLED OCCUP.	48.7	39.3	9.4	READING SKILLS	50.8	42.7	8.1	54.9	50.3	4.6	3.00	-1.4	10.6
% PARENTS BLACK	98.1	100.0	-1.9										
% PARENTS POVERTY ELIGIBLE	44.3	97.2	-52.9	LANGUAGE ARTS	26.5	20.3	6.2	28.4	25.6	2.8	2.84	-2.7	8.3
% HEAD HOUSEHOLD EMPLOYED	56.4	26.2	30.2										
% HEAD HOUSEHOLD MALE	65.0	24.2	40.8										
				PART II PARENT EVALUATION DATA									
NO. CLASSROOM GROUPS	3	2	1										
AV. PARENTS/CLASSRM GRP	10.0	7.6	2.4	PARENT-CHILD INTERACT	-.359	-.427	.068	-.150	-.226	.076	.353	-.62	.77
% W/O HIGH SCHOOL DIPLOMA	74.4	71.0	3.4										
% W/SKILLED OCCUP.	48.7	39.3	9.4										
% POS EVAL OF CHILD LRNG	77.6	76.4	1.2	PARENT-SCHOOL INVOLVE	.023	-.188	.211	-.102	-.412	.310	.478	-.63	1.25
% BLACK	98.1	100.0	-1.9										
% REPORTING USE OF PRESCHOOL	57.0	87.5	-30.5										
% POVERTY ELIGIBLE	44.3	97.2	-52.9	CHILD ACADEMIC EXPECT	.214	-.245	.459	.546	.012	.534	.495	-.44	1.50
% HEAD HOUSEHOLD EMPLOYED	56.4	26.2	30.2										
% HEAD HOUSEHOLD MALE	65.0	24.2	40.8	SENSE OF CONTROL	-.599	.042	-.641	-.664	-.049	-.615	.469	-1.53	.30
				PART III TEACHER EVALUATION DATA									
NO. OF CLASSROOMS	4	3	1										
JOB SATISF. RATING	1.8	1.3	0.5	PARENT-EDUCATOR IMAGE	0.19	0.57	-0.38	0.05	0.65	-0.61	0.226	-1.05	-.17
BOOK RESOURCE SCALE	2.7	5.0	-2.3										
RACE (BLACK/NONBLACK)	0.3	0	0.3										
IDENT. W. COMMUNITY	1.7	1.0	0.7	PROFESSION. ACCEPT OF METHOD	1.33	2.00	-0.67	1.35	1.89	-0.54	0.316	-1.16	.08
NO. OF HELPERS	2.3	0	2.3										
ABLE TO CHOOSE ASSIGNMENT	1.0	1.0	0										
TRNG & TEACHER EXPER	5.0	6.0	-1.0										

PROCESS DATA

PROJECT DESCRIPTIONS

REGION	MIDDLE ATLANTIC
DISTANCE TO NEAREST SMSA . .	WITHIN
SIZE OF NEAREST SMSA	[illegible]
PERCENT MINORITY	36
PROJECT SIZE (PUPILS) . . .	300
NO. PUPILS/PAC MEMBER . . .	16.0
FT PER-PUPIL EXPENDITURE . .	890

CLASSROOM DATA NOT AVAILABLE FOR THIS PROJECT

and teacher variables do not add to the negligible evidence that this project had impact. FT parents scored higher than NFT parents on all variables except sense of control, but none of the differences is statistically significant. Furthermore, NFT teachers scored significantly higher than FT teachers in their ratings of how essential they considered contact with the parents outside the classroom.

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*See "Guide for Interpretation of Results" for explanation of table entries.

Overall, there is little evidence of FT impact in this project. Pupil and teacher outcomes show negligible, or unfavorable differences. Since this project is parent-implemented, the absence of clear parent impacts suggests that the project is meeting with little success.

Analysis of the one-year effects on children in Cohort I-K (see Table 95) indicates that FT pupils did improve somewhat from Spring 1970 to Spring 1971. At the end of the first year, the FT children were higher than the NFT children only on the language variable and equal only on the cognitive process variable. At the end of two years, the FT group scored higher than the NFT group on all variables. However, additional data are needed to determine whether significant program impacts are emerging.

TABLE 95

PROJECT DATA TABLE--PARENT IMPLEMENTED PROJECT, COHORT I, KINDERGARTEN: ONE-YEAR EFFECTS, 1969-1970

BASELINE/CONTROL DATA				OUTCOME DATA				ADJUSTED OUTCOME DATA					
												CONFIDENCE INTERVAL	
VARIABLE	FT	NFT	DIFF	VARIABLE	FT	NFT	DIFF	FT	NFT	DIFF	S. E.	LOW	HIGH
				CHILD EVALUATION DATA									
NO. OF CLASSROOMS	3	3	0	OVERALL ACHIEVEMENT	85.3	84.7	.6	92.0	97.8	-5.8	7.69	-20.9	9.3
QUANT. PRESCORE	17.9	17.4	.5										
COG. PROCESS PRESCORE	5.6	3.3	2.3	AFFECT	15.2	16.9	-1.7	15.8	18.1	-2.3	1.74	-5.7	1.1
READING PRESCORE	22.5	25.5	-3										
LANGUAGE PRESCORE	8.9	8.0	.9	ATTENDANCE	18.1	27.8	-9.7	17.3	18.5	-1.2	5.08	-11.2	8.8
AFFECT PRESCORE	15.2	15.2	0										
AGE (JUNE '71)	82.3	83.9	-1.6	WRAT TOTAL	39.5	39.0	.5	43.1	43.7	-.6	4.38	-9.2	8.0
% CLASSROOM MALE	48.7	40.3	8.4										
% CLASSROOM BLACK	100	100	0	QUANTITATIVE	23.5	24.4	-.9	24.7	28.3	-3.6	2.23	-8.0	.8
% PRESCHOOL (OR NO. MOS.)	57	87.5	-30.5										
% PARENTS W/O HS DIPL.	74.4	71	3.4	COGNITIVE PROCESSES	7.4	6.4	1	7.8	7.8	0	.74	-1.5	1.5
% PARENTS W/SKILLED OCCUP.	48.7	39.3	9.4										
% PARENTS BLACK	98.1	100	-1.9	READING SKILLS	42.4	43.3	-.9	47.9	49.8	-1.9	5.25	-12.2	8.4
% PARENTS POVERTY ELIGIBLE	44.3	97.2	-52.9										
% HEAD HOUSEHOLD EMPLOYED	56.4	26.2	30.2	LANGUAGE ARTS	12	10.5	1.5	11.9	11.7	.2	1.13	-2.0	2.4
% HEAD HOUSEHOLD MALE	65	24.2	40.8										

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*See "Guide for Interpretation of Results" for explanation of table entries.

Part 2

SUMMARY OF OVERALL INTERIM FOLLOW THROUGH EFFECTS

Part 2: SUMMARY OF OVERALL INTERIM FOLLOW THROUGH EFFECTS

The interim FT/NFT effects obtained from the separate cohort analyses are summarized in Tables 96 through 99. These tables present adjusted FT/NFT differences on all pupil, parent, and teacher outcomes. They also include entries for parent satisfaction, teacher job satisfaction, and number of classroom helpers. These last three variables are included in the tables because they reflect valid program objectives over and above differences possibly associated with comparison group problems. Note, however, that these "effects" are unadjusted, and that they are used as input controls (covariates) in the analysis of the other program outcomes.

Table entries with a positive sign indicate differences favoring FT; those with negative signs show differences favoring NFT.* Those differences reaching significance ($p < .05$) are flagged with an asterisk. Overall cohort averages (computed by summing across projects) are presented at the bottom of each table. These overall, or "average," cohort values represent the mean FT/NFT difference for each outcome. The row marked "Percent FT Favoring" at the bottom of each table shows the percentage of projects reporting FT-favoring differences for each outcome variable.

Because the interpretation of outcome effects is moderated by the comparability of FT and NFT samples, the tables include a designation for each FT/NFT comparison as a "good," "moderate," or "poor" match. These designations were derived by inspecting seven of the demographic baseline variables:

(1) Percentage of students with preschool experience.

(2) Percentage of parents without high school diplomas.

(3) Percentage of parents in skilled occupations.

(4) Percentage of Black parents.

(5) Percentage of parents who are poverty eligible.

(6) Percentage of heads of household currently employed.

(7) Percentage of heads of household who are male.

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*The exception to this rule is the attendance variable; fewer absences for FT is represented by a minus sign.

TABLE 96

SUMMARY OF INTERIM EFFECTS FOR COHORT 1, KINDERGARTEN

		CHILD MEASURES								PARENT MEASURES					TEACHER MEASURES			
PROJECT CODE	MATCH	ACHIEVEMENT	AFFECT	ATTENDANCE	WRAT	QUANTITATIVE	COG. PROCESS	READING	LANGUAGE	PARENT-CHILD INTERACT.	PARENT-SCHOOL INVOLVEMENT	CHILD ACADEMIC EXPECTATION	SENSE OF CONTROL	POS. EVAL OF CHILD LEARNING	PARENT-EDUCATOR IMAGE	PROF. ACCEPT. FT	JOB SATISFACTION	NO. OF HELPERS
TWO YEAR OUTCOMES																		
SS(b)†	GOOD	8.0	-.1	-12.0*	3.4	3.7	.6	3.1	.7	.373	.356	.286	.644	4.8	-.08	-.26	.5	.2
SS(c)†	MOD	14.3*	.5	-3.8	9.6*	2.4	.1	8.8*	2.9	-.038	-.188	.019	-.368	1.6	—	—	—	—
SS(d)†	GOOD	-11.1	-.5	-1.9	-7.5*	-3.2	-.4	-6.7*	-.5	.181	.002	.162	.438	27.2*	-.05	.80*	.1	-.1
SS(e)†	POOR	-10.7	-.6	7.4*	-6.1	-1.9	-.4	-4.9	-3.4	-.070	-.426	-.337	-.515	24.7*	—	—	—	—
FW(a)	GOOD	-4.1	.7	5.7*	-7.4	.1	-.6	-2.3	-1.8	.240	.091	-.535	-1.12*	8.5	—	—	—	—
FW(b)†	GOOD	5.5	.8	-1.7	1.6	.9	.3	2.0	2.3	-.147	.721*	.112	[illegible]	-24.5*	-.29	.40	.2	1.6*
FW(c)	MOD	9.8	1.2	-.3	3.9	6.5*	.1	0	3.3	-.287	-.091	-.800	.115	12.5	-.23	.38	-.3	1.2*
UA(a)	GOOD	-2.1	-.1	-3.9	-3.3	-1.8	.6	-1.7	.4	.146	.366	.197	.015	26.5	-.05	.63*	-.1	1.5*
UA(d)†	MOD	-1.2	-1.1	2.1	-1.2	3.4	.7	-2.5	-2.8	.460	.697*	.589	-.457	12.5	-.26	.23	.2	1.2*
BC(a)	POOR	-17.4	.3	1.9	-12.5	-7.0	1.7*	-8.4	-3.3	—	—	—	—	—	—	—	—	—
BC(b)	MOD	-12.9	-2.6*	-1.3	-8.4*	-4.2	.4	-7.6*	-1.6	-.157	.665	.185	.288	-8.3	-.41*	.29	-.2	1.7*
BC(c)	MOD	8.8	1.0	1.9	2.2	9.3*	-.2	.5	-.7	.408	.735	-.367	.438	26.8	-.04	-.22	-.8*	-.7
BC(e)	MOD	2.3	-2.0*	.5	.5	1.2	-.2	0	1.4	.595*	.328	-.085	-.285	25.6*	-.36*	.51*	.1	0
UO(a)	POOR	5.1	1.1	-10.5*	5.9	-.2	-.5	4.8	1.0	-.192	.303	-.560	.160	51.9*	-.23	.88*	.5	1.0*
UO(b)	MOD	-5.4	-1.1	3.1	-1.1	2.5	-.8	-3.7	-3.4	.503	.304	-.025	-.022	26.4	-.03	1.01*	-.5	2.0*
UO(c)	GOOD	8.4	-1.4	-2.2	6.0	-.4	.3	5.6	2.8	-.031	.156	.423	-.252	29.3*	-.31	-.15	.1	1.0*
UK(a)	MOD	-10.1	.1	-1.1	-8.2	1.6	.3	-6.8	-5.0	.041	.115	.210	-.264	8.3	—	—	—	—
UK(b)†	POOR	8.6	.5	1.6	5.2	4.3	1.0	2.6	.7	-.157	.653	-.446	.217	-13.5	—	—	—	—
UK(c)†	GOOD	-1.7	-.7	-4.6	-1.3	1.3	.7	-.7	-3.0	.492	.023	-.132	.372	-9.9	—	—	—	—
HS(c)	MOD	-27.8*	1.9*	-8.0*	-19.2*	-8.2*	.7	-12.5*	-7.3*	-.029	.058	-.405	-.135	-4.3	—	—	—	—
UF(a)	MOD	-16.0*	.2	-15.2*	-9.4*	-3.5	-.1	-7.4	-4.7*	-.119	.084	.144	.146	-4.8	-.34	.76*	-.5	2.0*
UF(c)†	GOOD	7.2	.4	-1.2	4.9	.6	.5	4.7	1.3	.437	.505	-.090	-.069	-11.5	-.79*	-.36	.2	.5
ED(b)†	GOOD	.8	-.9	1.4	-2.5	2.1	.6	-2.7	-.8	-.216	-.225	.198	.203	-2.2	-.30	.22	-.2	1.0*
ED(c)†	GOOD	21.0	.7	1.7	9.7	8.6*	.9	10.3	1.5	—	—	—	—	—	.53*	.60	-.6	0
NY(a)	GOOD	8.1	.3	-7.5	2.6	5.2*	-.5	2.6	.8	-.011	.174	-.395	.341	11.1	-.16	.60*	-.4	-.5
NY(b)	GOOD	-.7	-.4	5.5*	.6	-.3	.2	1.5	-2.3	-.144	.291	-.333	.348	-.5	.02	.87*	-.1	1.0*
SV	MOD	34.8*	-1.7	-5.0	14.8*	13.3*	-.2	9.8*	2.0	.080	-.324	-.079	.181	26.4*	-.05	.21	-.6*	0.7*
PI†	MOD	12.7	1.5	-2.7	8.2	1.0	.1	8.6	2.8	.076	.310	.534	-.615	1.2	-.61*	-.54	.5	2.3*
OVERALL		.8	-.1	-1.8	-.3	1.3	.2	-.1	-.6	.094	.219	-.059	-.009	9.5	-.20	.34	-.1	.9
PERCENT FT FAVORING		50%	50%	57%	54%	64%	64%	48%	50%	50%	81%	40%	54%	65%	10%	75%	45%	75%
ONE-YEAR OUTCOMES																		
SS(b)	GOOD	11.6*	2.9*	-.7	4.7	3.3*	.5	5.6	2.0*									
SS(c)	MOD	-2.2	-2.5*	3.3	-.4	-.9	.2	-1.0	-.1									
SS(d)	GOOD	5.2	-.7	-7.5	1.8	1.9	.4	2.7	-.6									
SS(e)	POOR	3.0	1.7	-1.7	2.5	.2	.1	3.2	-.6									
FW(b)	GOOD	-1.4	1.4	-2.9	-1.2	1.2	0	-3.6	.6									
UA(d)	MOD	3.3	.7	-2.7	1.2	.9	.5	1.0	.1									
UK(b)	POOR	5.4	.9	9.8*	-.6	4.1	.7	-.5	1.1									
UK(c)	GOOD	15.9*	-1.3	2.0	10.1*	3.5*	1.0	10.0*	1.4									
UF(c)	GOOD	-3.9	-.4	3.8	-4.6	1.5	.4	-5.6	.3									
ED(b)	GOOD	-4.9	-1.2	11.2*	-.4	-.3	.2	-4.7	-.5									
ED(c)	MOD	7.8	-1.4	-4.9	1.7	2.0	.3	5.9	.2									
PI	MOD	-5.8	-2.3	-1.2	-.6	-3.6	0	-1.9	.2									
OVERALL		2.8	-.2	.7	1.2	1.2	.4	.9	.3									
PERCENT FT FAVORING		58%	42%	58%	50%	75%	83%	50%	67%									
TWO-YEAR OUTCOMES FOR THE PROJECTS WITH ONE-YEAR DATA		4.3	.04	-1.1	2.0	1.9	.39	1.9	.14									
PERCENT FT FAVORING		58%	50%	58%	58%	83%	83%	58%	58%									

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*Difference reaching significance--i.e., $p < .05$.

†Projects for which one-year outcomes are also given.

TABLE 87

SUMMARY OF INTERIM EFFECTS FOR COHORT II, KINDERGARTEN
(ONE-YEAR OUTCOMES)

		CHILD MEASURES								PARENT MEASURES					TEACHER MEASURES			
PROJECT CODE	MATCH	ACHIEVEMENT	AFFECT	ATTENDANCE	WRAT	QUANTITATIVE	COG. PROCESS	READING	LANGUAGE	PARENT-CHILD INTERACT.	PARENT-SCHOOL INVOLVEMENT	CHILD ACADEMIC EXPECTATION	SENSE OF CONTROL	POS. EVAL OF CHILD LEARNING	PARENT-EDUCATOR IMAGE	PROF. ACCEPT. FT	JOB SATISFACTION	NO. OF HELPERS
PV(a)	GOOD	.5	-.9	7.8*	4.6	1.1	-1.1*	1.9	-.6	-.162	.643	-.034	-.195	20.6	--	--	--	--
PV(b)	GOOD	-5.1	-1.2	-2.9	-4.2	-1.8	0	-3.2	-.3	.797*	.718	.119	.411	23.9*	-.38	1.08	.5	2.9*
PV(c)	MED	10.4	-.6	1.9	-1.8	3.0	2.8*	3.1	1.9	-.050	-.023	-.542	.227	11.8	.21	1.09	.7	.5
SC(a)	GOOD	9.5	.2	8.0	7.6	4.4	1.0	3.7	.8	.150	.036	.130	.272	-12.3	--	--	--	--
SD(a)	MED	27.4	1.0	-7.5	23.1	7.8	.1	16.7	3.6	1.030*	.505	.253	-.330	9.9	.17	1.41	.6	3.0*
SF(a)	GOOD	31.6*	1.4	-1.4	20.8*	7.1*	.9	20.6*	3.0*	.067	.352	.193	.379	1.6	-.38	-.11	.1	1.0
SD(b)	GOOD	-13.1	-2.3	-7.5	-7.1	-6.9*	-.8	-4.9	-1.6	--	--	--	--	--	--	--	--	--
ST(a)	MED	8.5	.2	-6.2	3.0	2.8	.6	3.0	2.1	.300	.308	-.230	.207	17.6	--	--	--	--
OVERALL		6.7	-.15	-.6	3.8	2.3	.4	5.1	1.1	.304	.284	-.083	.132	10.4	-.09	.67	.5	1.4
PERCENT FT POSITIVE		75%	50%	63%	63%	75%	63%	75%	63%	71%	86%	57%	71%	86%	50%	75%	100%	100%

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*p < .05.

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]									
SS(a)	MOD	-3.8	.5	3.4	-3.9	-1.6	-.3	-2.9	1.2
UA(c)	MOD	-9.9*	3.3*	2.8	-3.2	-3.8	-1.4*	-2.1	-2.9*
BC(d)	GOOD	.8	1.7	-5.8	.5	.4	-.4	.4	.6
UO(d)	POOR	10.6*	-.3	-9.3*	4.1	2.4	1.1	5.3	1.9
HS(a)	MOD	-6.9	3.8*	-1.6	-5.2	-1.0	.5	-5.5	-1.1
MS(b)	MOD	-4.3	-1.8	-2.4	-1.9	-2.3	-.6	-.3	-1.3
ED(a)	MOD	4.8	-.5	.1	1.2	.3	.9*	3.7	-.1
OVERALL		-1.2	1.0	-1.8	-1.2	-.8	-0	-.2	-.2
PERCENT FT FAVORING		43%	57%	57%	43%	43%	43%	43%	43%
TWO-YEAR OUTCOMES FOR PROJECTS WITH ONE-YEAR DATA		-2.7	-1.4	-3.1	-2.2	.8	--	-3.2	-.2
PERCENT FT FAVORING		43%	14%	86%	43%	43%	--	43%	43%

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* $p < .05$.

† Projects for which one-year outcomes are also given.

TABLE 99

SUMMARY OF INTERIM EFFECTS FOR COHORT II, ENTERING FIRST
(ONE-YEAR OUTCOMES)

		CHILD MEASURES								PARENT MEASURES					TEACHER MEASURES			
PROJECT CODE	MATCH	ACHIEVEMENT	AFFECT	ATTENDANCE	WRAT	QUANTITATIVE	COG. PROCESS	READING	LANGUAGE	PARENT-CHILD INTERACT.	PARENT-SCHOOL INVOLVEMENT	CHILD ACADEMIC EXPECTATION	SENSE OF CONTROL	POS. EVAL OF CHILD LEARNING	PARENT-EDUCATOR IMAGE	PROF. ACCEPT. FT	JOB SATISFACTION	NO. OF HELPERS
UA(c)	GOOD	-5.6	2.1*	-5.0	-1.2	-1.6	-1.1	-2.9	-1.0	.087	.101	.144	-.702	-11.8	.22	.48	.1	.3
BC(d)	GOOD	21.5*	1.1	4.1	15.1*	7.8	.5	13.2*	4.3*	.306	.436	.056	.179	-9.1	-.49	.93	.5	2.9*
UO(d)	MOD	32.3	1.9	-.4	42.9*	22.1	.5	29.6	11.7	-.196	.277	-.100	1.57	58.8*	-.46	-.03	-.4	2.0*
UF(b)	POOR	23.9*	2.0*	2.4	17.0*	11.9*	.7	13.3*	5.3*	--	--	--	--	--	.29	.11	.7	2.5*
OVERALL		23.5	1.8	.3	18.4	10.0	.2	13.3	5.1	.066	.278	.033	.349	12.6	-.11	.37	.2	1.9
PERCENT FT FAVORING		75%	100%	50%	75%	75%	75%	75%	75%	67%	100%	67%	67%	33%	50%	75%	75%	100%

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*p < .05.

For each project, the number of these variables showing a FT/NFT difference of 10 percentage points or more was tabulated. Three or less discrepancies of 10 percent or more resulted in the classification of an FT/NFT comparison as a "good" match. Four or five discrepancies of 10 percent or more resulted in a "moderate" match classification, and six or seven discrepancies of 10 percent resulted in a classification of "poor."

Since these labels are somewhat arbitrary, they should not be taken literally. One could reasonably argue that a good match is one in which FT and NFT differ on none of the demographic variables by more than 10 percent, but such a condition is virtually nonexistent in the present comparison. However, our classification scheme does provide useful information, and it is discussed later in this section.

Discussion of Summary Tables

Cohort I, Kindergarten: Fall 1969 to Spring 1971

The second-year outcomes for Cohort I-K are summarized in Table 96. These results are mixed, with little consistent evidence of FT impact on the child outcome variables. Inspection of the average FT/NFT difference summed across projects shows FT-favoring differences on the achievement measure, the attendance measure (negative signs indicate less absenteeism), and the quantitative and cognitive processes measures. The remaining measures favor NFT All of these differences are small and not especially noteworthy.

The parent outcome measures are also not especially noteworthy, except for the parent/school involvement variable, for which 81 percent of the projects display FT-favoring results. This suggests that FT is having an impact on the degree to which parents become involved in school-related activities. (One must keep in mind that these measures are obtained during the child's first year of FT participation. Thus, parent outcomes are first-year outcomes, regardless of the cohort or grade stream).

For Cohort I teacher results, three of the four measures display strong results.* Seventy-five percent of the projects display FT-favoring differences for both the teacher acceptance of methods and the number of classroom helpers available to the teacher. On the other hand, only 10 percent of the projects display FT-favoring differences for the teacher's image of the parent as an educator (i.e., in 90 percent of the projects, NFT teachers considered at least some kinds of involvement with parents in the educational process more "essential" than did the FT teachers). This outcome is difficult to interpret without more information. At first, it suggests that for this cohort, a high degree of parental involvement has not been favorably received by many FT teachers. It may also mean that FT teachers, having had extensive contact with parents, view the parental role as supportive rather than essential.

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*The teacher satisfaction variable and the number of classroom helpers variable are represented by unadjusted (i.e., not subject to covariable adjustment) outcome measures.

Cohort I, Kindergarten: Fall 1969 to Spring 1970

The one-year effects for Cohort I-K are also summarized in Table 96. The evidence of program impact is slightly more encouraging in these data. FT-favoring outcomes are noted in 75 percent of the projects for the quantitative measure and in 83 percent of the projects for the cognitive processes variable. However, the average FT-favoring difference per project for these variables is relatively small. The results for the remaining variables are not particularly noteworthy.

Table 96 also permits comparison of one-year and two-year summary effects of Cohort I-K. The data row labeled "Two-Year Outcomes for Projects with One-Year Data" presents the average FT/NFT second-year difference scores for the projects included in the first-year sample (i.e., these projects represent a subset of the Cohort I-K two-year effects sample). These comparisons suggest some longitudinal impact for FT projects, since the percentage of FT-favoring outcomes is generally higher in the second year than it is in the first. This trend is also apparent in the average FT effect across projects. This indicates that, with the exception of the cognitive processes variable and the language variable, FT children show a greater advantage over their NFT counterparts after two years than they do after one year.

Cohort II, Kindergarten: Fall 1970 to Spring 1971

The summary data for Cohort II-K are presented in Table 97. An examination of the child outcome variables is moderately encouraging in that all of the variables except affect show average differences in favor of FT. This pattern is also reflected in the percentage of projects reporting FT-favoring outcomes; the percentages range from a low of 50 (for the affect variable) to a high of 75 (for the achievement, quantitative, and reading variables).

Encouraging effects are also present for the parent outcome variables, where four of the five measures show overall FT-favoring differences (the parent expectation variable is the exception). For all variables, the majority of the projects showed FT-favoring results.

Teacher outcome data for Cohort II-K were available for only four projects. Although the small number of projects precludes interpreting the data with confidence, the summary outcomes are generally FT favoring.

Cohort I, Entering First: Fall 1969 to Spring 1971

The second-year summary for Cohort I-EF is presented in Table 98. The results for the child outcome variables in this table are considerably less encouraging than those for Cohort I-K projects. In particular, the affect, WRAT, reading, and language measures display average outcomes favoring the NFT sample. The only overall outcomes in favor of FT were those for the attendance and quantitative variables. This pattern is also displayed by the percentage of FT-favoring results. Only the attendance and reading variables show a higher number of FT-favoring differences.

The parent outcome results for this cohort sample show a provocative and somewhat paradoxical pattern. Overall results showed FT-favoring differences (both average project effects and percentage of FT-favoring differences) for the parent-child interactions, the parent-school involvement, and the sense of control variables. The average project effect was NFT favoring for parent expectations; in only 20 percent of the projects did FT parents report higher expectations for their child's success than did NFT parents. But, ironically, 80 percent of these same projects showed higher proportions of FT parents reporting they were satisfied with their child's current progress. This might indicate that FT parents in these predominantly Southern rural projects simply have lower overall aspirations for their children and, hence, appear satisfied with their children's current progress. But this interpretation is hard to reconcile with the more positive FT results for the school involvement and sense of control measures, unless these parents are responding to the expectation measures on the basis of a larger socio-cultural context. (Many of these projects involved very poor Black FT families and less poor non-Black NFT families).

The teacher results for this cohort sample are also difficult to interpret straightforwardly. The average project differences show virtually no FT effects on the teacher's image of the parents, and FT teachers appear, on the average, no more or less satisfied with their working conditions than do NFT teachers. But literally every project shows FT teachers are more approving of their methods than NFT teachers, and in only one project did NFT teachers report more classroom helpers than did FT teachers. This pattern of outcomes suggests FT is well regarded by these teachers, perhaps because they receive more classroom assistance. The interesting result is that these FT teachers are apparently less negative (compared with NFT teachers) in their view of the parent as an educator than were the FT teachers in the Cohort I-K and II-K samples. Whether this reflects better parent-teacher relationships, indifference, or something else is unclear at this point in the evaluation.

Cohort I, Entering First: Fall 1969 to Spring 1970

The available first-year child outcome data for Cohort I-EF, also presented in Table 98, can be directly compared with second-year data. The number of projects for which both one- and two-year results exist is small (seven in all), which necessarily limits the confidence that can be placed on the interpretation. The pattern of first-year results is essentially the same as that noted for the second-year data. Most of the variables display NFT-favoring trends (the exceptions are the attendance and affective measures) for both the average difference measure and the percentage of FT-favoring projects measure.

The comparison of these Cohort I-EF first-year and second-year effects reveals some interesting differences over those displayed by the Cohort I-K sample. Specifically, second-year effects for Cohort I-K were more favorable than first-year effects, suggesting a cumulative positive impact for FT. The opposite is true for the present Cohort I-EF projects, where there is evidence of a progressive decrement; second-year outcomes more frequently reflect NFT-favoring trends than do the results for these same children after their first year in the program. But since the NFT samples represent a different population than the FT samples in many instances, this result is likely due to inappropriate comparisons and thus is not interpretable.

Cohort II, Entering First: Fall 1970 to Spring 1971

The results for the Cohort II-EF projects are summarized in Table 99. Since only four projects are included in this sample, summary statistics are likely to be unreliable. The results presented indicate a favorable impact for the FT program. With the exception of the attendance variable, all of the child outcome variables show FT-favoring differences. A similar pattern is observed for the parent outcome variables, where FT-favoring trends are present for all variables. The teacher outcome variables also display favorable trends, with the exception of the parent image measure.

The Parent Image Variable

The overall trend toward negative FT results for the teacher's image of parents as educators deserves some special attention. NFT teachers who have not had much interaction with parents may have an exaggerated notion of the importance of such contacts, and FT teachers may be making more informed judgments. Perhaps contact with parents outside of the school context is less important to FT teachers because they have more in-school interaction and because they feel that further contact with parents is unnecessary. Or perhaps FT parent-teacher interactions have, in fact, engendered resentments. The difficulty is that we do not know at present why the teachers responded the way they did to the items as presented on the questionnaire, and thus, we prefer not to draw interpretative conclusions at this point in the study. Nevertheless, the pattern is clear and consistent; NFT teachers reliably tended to rate parents and parent contacts outside of class as more essential to the child's education than did FT teachers.

Discussion of Sample Matching

The classification scheme used to index sample comparability was devised to assist interpretation of the outcomes associated with the FT projects. As described earlier, this scheme provides a basis for classifying each FT/NFT comparison within projects as a "good", "moderate," or "poor" match. The frequencies with which projects were classified into "good," "moderate," and "poor" match categories relative to each set of outcome analyses are summarized in Table 100. This table shows that of 28 Cohort I-K projects for which two-year child outcomes were analyzed, 12 were classified as having reasonably "good" baseline comparability, 12 as "moderate" and 4 as "poor." Similarly, for the 26 Cohort I-K projects for which parent outcomes were analyzed, 11 had "good" matches, 12 had "moderate," and 3 had "poor."

Using this classification scheme and summing across all such entries, roughly 41 percent of the outcome analyses involved "good" FT/NFT matches, 48 percent involved "moderate" matches, and 11 percent involved "poor" matches. But two important features of this procedure need to be stressed. First, the classification scheme is arbitrary, although we believe it is reasonable and objective. Second, classroom composition and pupil families are the match variables, whereas the match classification is applied to pupil, parent, and teacher outcome analyses. Hence, it would not be unusual if teacher outcomes were unrelated to the quality of pupil/parent matches.

TABLE 100

FREQUENCY OF "GOOD," "MODERATE," AND "POOR" FT/NFT MATCHES, BASED ON BASELINE DIFFERENCES FOR THE SEVEN MATCH VARIABLES

COHORT SAMPLE	OUTCOME MEASURES	MATCH CATEGORY GOOD	MODERATE	POOR	TOTAL
I-K, TWO YEAR	CHILD	12	12	4	28
	PARENT	11	12	3	26
	TEACHER	10	9	1	20
I-K, ONE YEAR	CHILD	6	4	2	12
II-K, ONE YEAR	CHILD	5	3	0	8
	PARENT	4	3	0	7
	TEACHER	2	2	0	4
I-EF, TWO YEAR	CHILD	2	7	2	11
	PARENT	2	7	1	10
	TEACHER	1	6	1	8
I-EF, ONE YEAR	CHILD	1	5	1	7
II-EF, ONE YEAR	CHILD	2	1	1	4
	PARENT	2	1	0	3
	TEACHER	2	1	1	4
TOTAL		62	73	17	152
PERCENT		40.8%	48.0%	11.2%	100.0%

With these cautions in mind, several interesting trends can be observed in Table 101, which displays the distribution of FT-favoring results for the independent outcome variables as a function of match category. These frequencies are tabulated within each of the four cohort groupings for each of the six separate (nonoverlapping) adjusted pupil outcome measures, for the four adjusted and one unadjusted parent variables, and for the two adjusted and two unadjusted teacher variables. Hence, for Cohort I-K project child outcomes, 5 of the 12 "good" matched projects, 7 of the 12 "moderate" matched projects, and 3 of the 4 "poor" matched projects showed FT-favoring results on the affect measure. Similarly, 8 of the 12 "good" matched projects yielded FT-favoring differences for attendance, and so forth.

TABLE 101

FREQUENCY AND PROPORTION OF FT-FAVORING OUTCOMES FOR THE COHORT SAMPLES AS A FUNCTION OF FT/NFT MATCH QUALITY

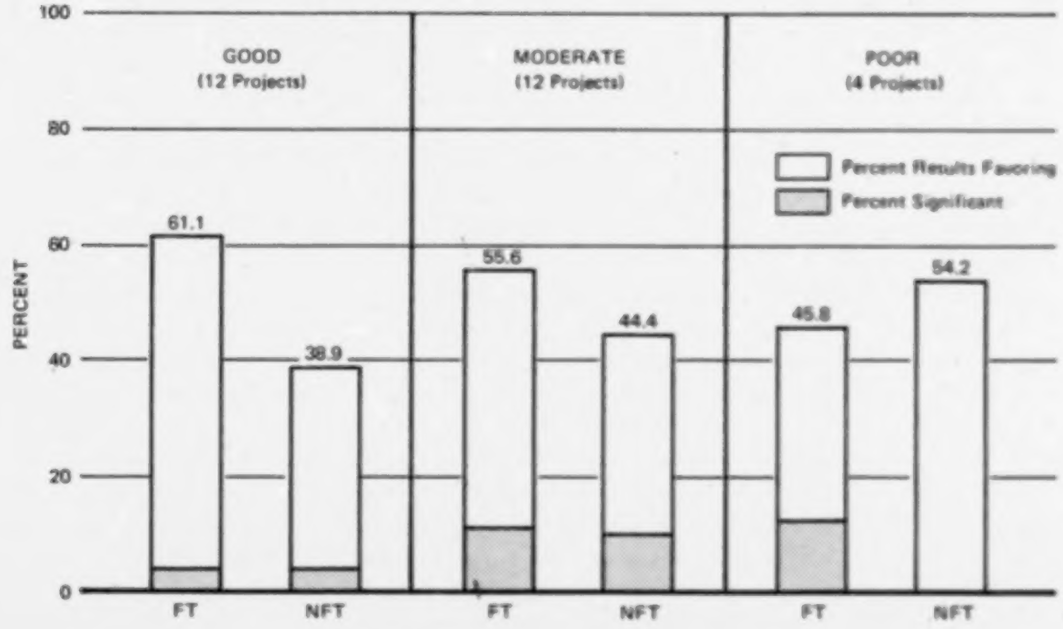
	COHORT I-K			COHORT II-K			COHORT I-EF			COHORT II-EF		
MEASURE	GOOD	MODERATE	POOR	GOOD	MODERATE	POOR	GOOD	MODERATE	POOR	GOOD	MODERATE	POOR
CHILD												
AFFECT	5	7	3	2	2	--	0	3	0	2	1	1
ATTENDANCE	8	8	1	3	2	--	2	5	1	1	1	0
QUANTITATIVE	8	9	1	3	3	--	2	3	0	1	1	1
COGNITIVE PROCESSES	9	7	2	2	3	--	N.A.	N.A.	N.A.	1	1	1
READING	7	4	2	3	3	--	2	3	1	1	1	1
LANGUAGE	7	5	2	2	3	--	2	3	0	1	1	1
TOTAL	44	40	11	15	16	--	8	17	2	7	6	5
NUMBER OF PROJECTS	12	12	4	5	3	0	2	7	2	2	1	1
PERCENT FT-FAVORING	61%	56%	46%	50%	89%	--	80%	49%	20%	58%	100%	83%
PARENT												
PARENT-CHILD INTERACTION	6	7	0	3	2	--	1	6	0	2	0	--
PARENT-SCHOOL INVOLVEMENT	10	9	2	4	2	--	1	5	0	2	1	--
CHILD ACADEMIC EXPECTATION	6	6	0	3	1	--	0	2	0	2	0	--
SENSE OF CONTROL	7	5	2	3	2	--	1	5	0	1	1	--
SATISFACTION WITH PROGRESS	6	9	2	3	3	--	1	6	1	0	1	--
TOTAL	35	36	6	16	10	0	4	24	1	7	3	--
NUMBER OF PROJECTS	11	12	3	4	3	0	2	7	1	2	1	0
PERCENT FT-FAVORING	64%	60%	40%	80%	67%	--	40%	69%	20%	70%	60%	--
TEACHER												
PARENT EDUCATOR IMAGE	2	0	0	0	2	--	0	3	1	1	0	1
PROFESSIONAL ACCEPTANCE	7	7	1	1	2	--	1	6	1	2	0	1
JOB SATISFACTION	5	3	1	2	2	--	1	3	0	2	0	1
NUMBER OF HELPERS	7	7	1	2	2	--	1	4	1	2	1	1
TOTAL	21	17	3	5	8	--	3	16	3	7	1	4
NUMBER OF PROJECTS	10	9	1	2	2	0	1	6	1	2	1	1
PERCENT FT-FAVORING	52%	47%	75%	62%	100%	--	75%	67%	75%	88%	25%	100%

N.A. = not applicable.

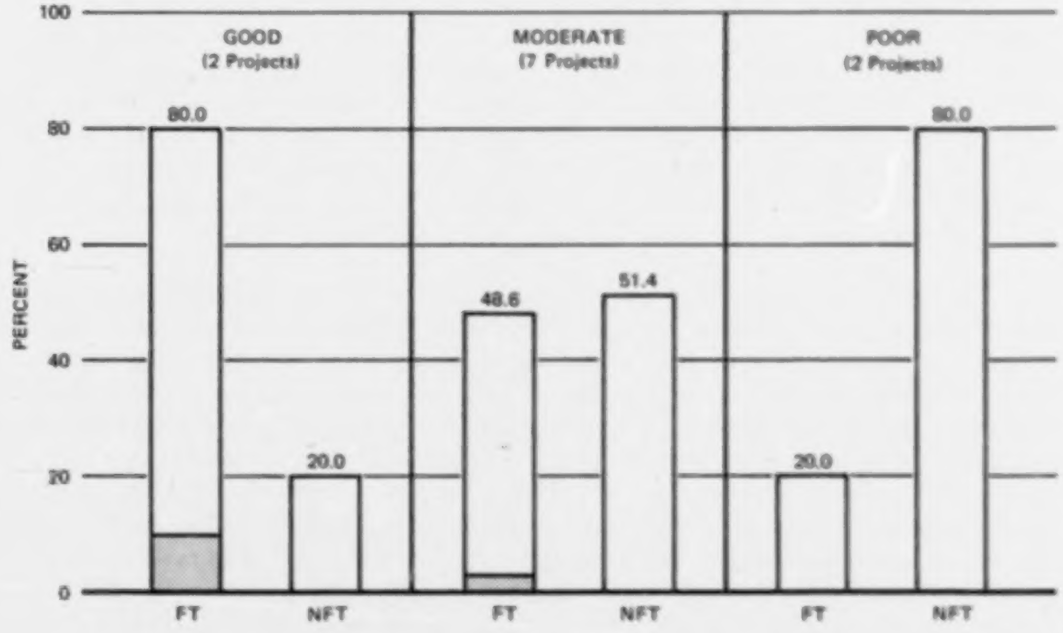
The entries at the bottom of each measurement category in Table 101 show the overall frequency and percent of FT-favoring results for each separate match classification. Thus, for Cohort I-K, 61 percent of the independent child outcomes among "good" matched projects favored FT, 56 percent of the "moderate" matches favored FT, and 46 percent of the "poor" matches favored FT. This trend is even more pronounced for Cohort I-EF, where the values are 80, 49, and 20 percent, respectively. The trend is less clear for Cohort II-K and II-EF, although interpretation is difficult because there were no "poor" match classifications for Cohort II-K and because only four projects were analyzed for Cohort II-EF. Yet the Cohort I pattern does appear to suggest that outcomes favor FT more strongly when comparability is good. Recall that FT populations tend to be more disadvantaged than comparison populations. Thus, when the FT/NFT comparisons are made between similar populations, FT-favoring pupil outcomes are likely.

The relationship of outcomes to quality of match becomes even more pronounced with parent data. This result is important because six of the seven match variables are parent characteristics. Although this evidence of a strong relationship between the proportion of FT-favoring results and the comparability of FT/NFT families is probably due to the inappropriateness of the covariance model (or any analysis model) when bias becomes great, it is not immediately clear why NFT is favored. A further breakdown of the nature of these extreme biases in the match between FT and NFT suggests an answer. In some three-fourths (76 percent) of the instances of extreme noncomparability (i.e., poor matches between FT and NFT), NFT was markedly less disadvantaged than FT. In contrast, barely more than half (56 percent) of the moderate mismatches between FT and NFT showed FT to be more disadvantaged than NFT. Hence, it is clear that these results are seriously dependent on both the magnitude and direction of initial biases and that covariance adjustments are insufficient to overcome these biases with these interim child and parent data.

We feel this result is very important, since it typifies the extraordinarily complex problem of obtaining valid assessments of individual project results. Figure 5 graphically displays the relationship of the pupil outcome trends to the degree of initial bias in the FT and comparison samples. These patterns are displayed separately for the K entrance (Part A) and First Grade entrance (Part B) project samples. Several features of the interim pupil results become evident in this display. First, the relationship between outcomes and match bias is unmistakable, even though the match variables were included as covariates in the analyses of the data. Second, this relationship appears more pronounced for EF than for K samples, which corresponds to our previously noted observation that match problems tend to be more severe for EF than K projects. Third, these match bias problems notwithstanding, the frequency of results reaching significance is clearly in favor of FT, whereas the rate of significant



(a) COHORT I KINDERGARTEN (1969-1971)



(b) COHORT I ENTERING FIRST GRADE (1969-1971)

FIGURE 5 RELATIONSHIP OF FT OUTCOMES TO COMPARISON GROUP EQUIVALENCE

differences for the NFT groups is generally at or below the "experimentwise" error rate (i.e., the overall alpha level). Finally in our judgment these trends provide sufficient evidence for deleting project samples judged as poorly matched with their comparisons from our summary assessments of interim program impacts on pupil and parent measures, since in these cases the initial mismatch apparently dominates the data.

Restricting our tabulations of outcomes (Table 101) to those project samples judged either well or moderately matched on the seven match variables (classroom composition and family characteristics) several interesting trends emerge. Figure 6 shows that for the 33 Cohort I (good and moderate matched) projects about 58% of the adjusted mean differences on pupil variables showed FT as having a positive impact, whereas for the 11 Cohort II projects, 67% of the outcomes were FT favoring. This upward trend in the proportion of FT favoring results (especially the proportion

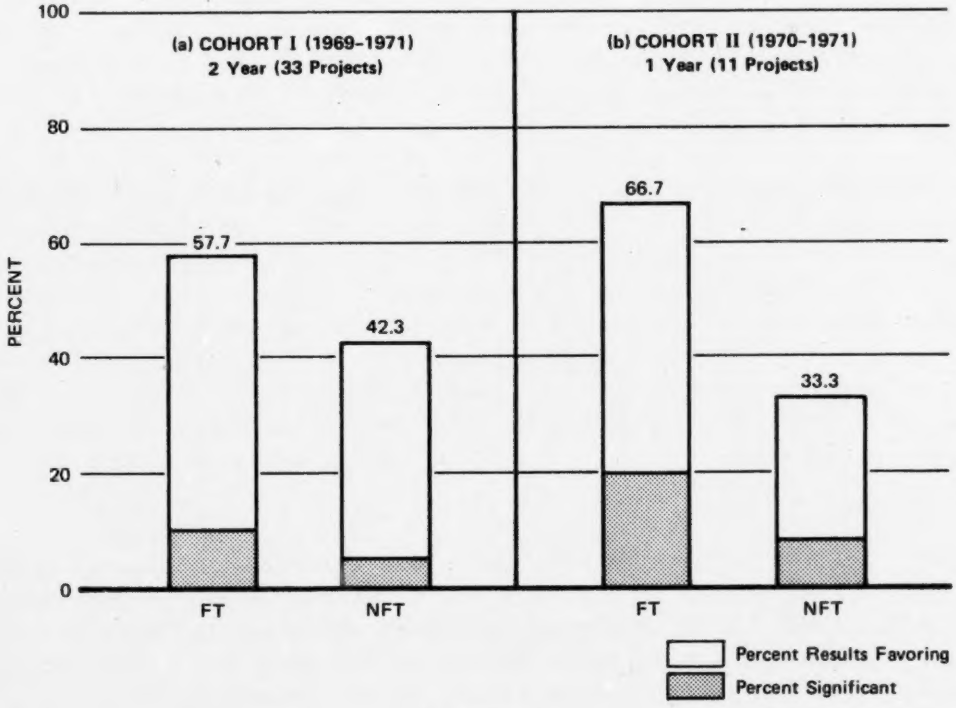


FIGURE 6 OVERALL FT IMPACT ON PUPIL OUTCOMES

of differences reaching significance) from Cohort I to Cohort II demonstrates an apparent program maturation phenomenon. That is, the impact of the program on successive cohorts appears to be getting stronger. This could mean that as sponsors, teachers, and other stakeholders gain experience with FT-like procedures, they become more effective implementers of the program. Also involved in this apparent effect, however, are improvements in evaluation methodology. Cohort II baseline measures were gathered substantially closer to the commencement of school and data collection procedures were more systematic, complete, and error-free than was the cost for Cohort I.*

However, the interpretation of a FT maturation or implementation effect is further supported upon comparison of program impact on successive cohort parent and teacher samples. Cohort I to Cohort II outcome (FT-NFT difference) trends on the five parent measures (reported child interactions, school involvement, satisfaction with progress, future expectations, and sense of control) are summarized in Figure 7. These results again summate results across only those projects for which NFT matches were categorized as good or moderate. Thus, of the 32 Cohort I projects, nearly 61% of the results showed positive FT impact, whereas for the 10 Cohort II projects, 72% of the results were FT favoring. This trend is further supported by a parallel trend in the proportion of differences reaching significance.

Teacher outcome data (Figure 8) show even stronger implementation or program maturational trends. These results which are summed across all projects† show the proportion of FT or NFT favoring (and proportion-significant) differences on the four teacher variables: Parent educator image, professional acceptance of method, job satisfaction and adult assistance. For the 28 Cohort I teacher samples, approximately 60% of all adjusted mean differences on these measures were FT favoring, whereas for the 8 projects represented by the Cohort II teacher data, over 78% of all differences favored FT. Thus it is difficult to escape the

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*Recall, Cohort I baseline pupil data were collected as late as December, 1969, whereas Cohort II pretest measures were gathered in September and October, 1970. And since baseline differences were included as covariates, CI FT programs which produced impacts in the first few months of school would be (invalidly) penalized, or at least underestimated.

†Since match categories were constructed independent of teacher consideration, there is no a priori basis for excluding teacher comparison data on projects mismatched with respect to pupil/family characteristics. In fact, the overall FT favoring outcome rates were 70%, 60%, 83% for good, moderate and poor matches, respectively.

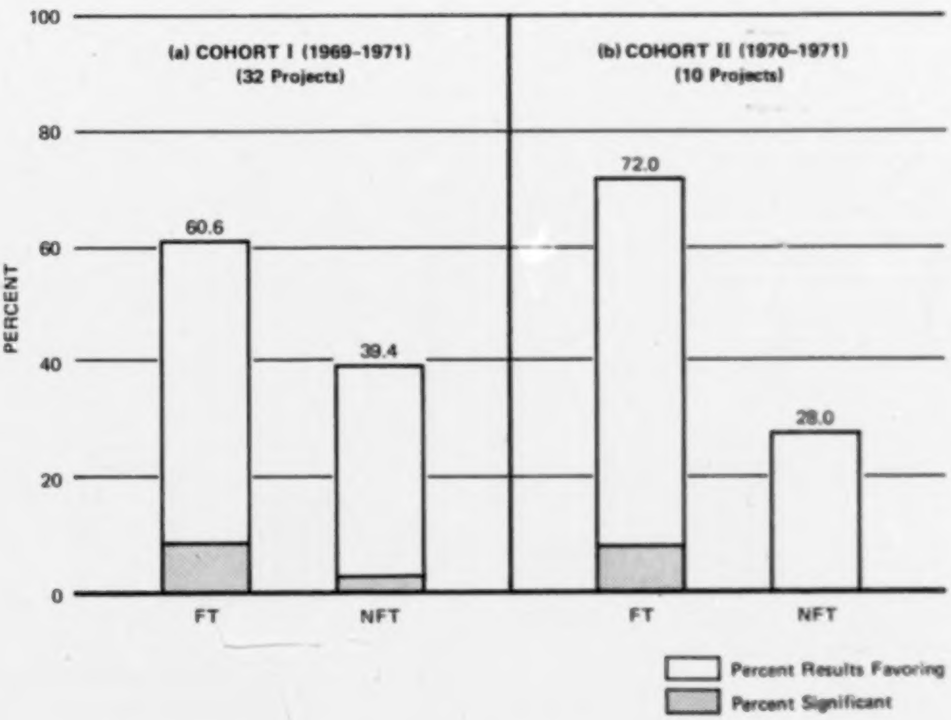

FIGURE 7 FT IMPACT ON PARENT ATTITUDES AND BEHAVIOR

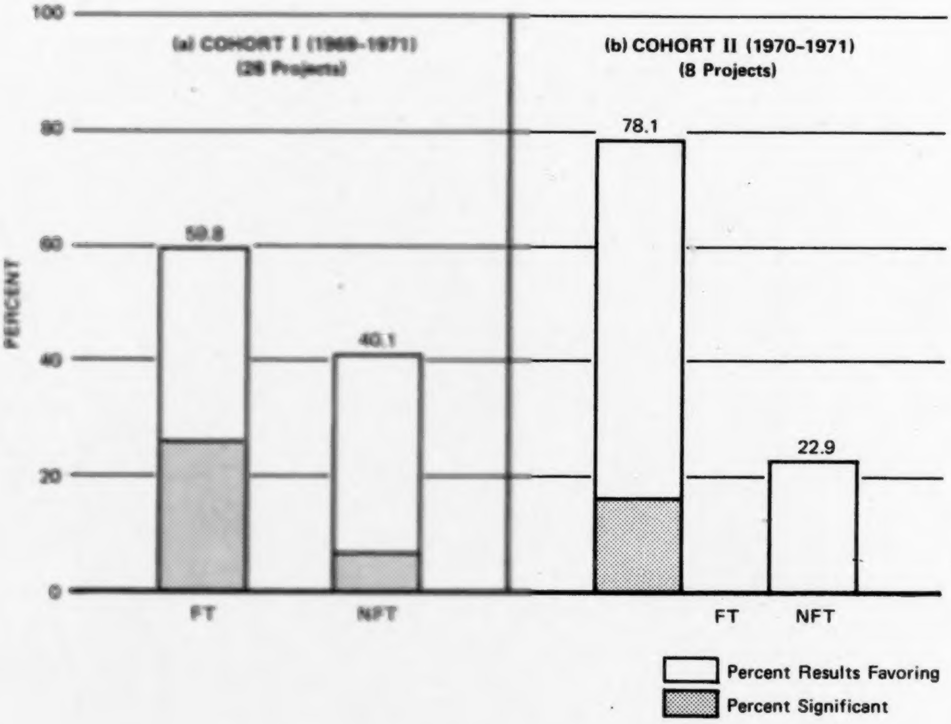

FIGURE 8 FT IMPACT ON TEACHER ATTITUDES AND BEHAVIOR

interpretation that FT is having a stronger and more positive impact on successive samples of parents and teachers, as measured by the current evaluation variables.

In summary, given the provocative relationships of outcomes to initial FT/comparison group equivalence as demonstrated above, added to the multiplicity of design and methodological factors which combine to produce extremely low statistical power for detection of differences as significant, it seems preferable to interpret these data patterns in the context of the overall, as opposed to "significant only" results, noting carefully each of the major caveats associated with interpretations at this time. We feel there is evidence of an emerging program impact, which is increasing in magnitude as the program matures. These trends are revealed by inspection of pupil, parent, and teacher outcomes for successive cohort samples, controlling for FT/NFT comparability. The extent of project and sponsor variation in conjunction with problems of sample size, measurement validity, and comparison group bias makes these conclusions highly speculative. However, one could expect little more from only a glimpse of emerging effects representing a limited sample of observations made less than one-fourth of the way through a planned national longitudinal experiment. To try to infer or conclude more than this now would be equivalent to attempting to describe the results of a race based on the relative positions of just a few participants at a point less than one-quarter of the distance to the goal. Such conjecture is neither responsible nor in the interest of the evaluation.

PART 3

OBSERVATIONAL EVIDENCE OF PLANNED VARIATIONS

PART 3: OBSERVATIONAL EVIDENCE OF PLANNED VARIATIONS

Background

A central purpose of the national Follow Through Program was to encourage the development and refinement of improved approaches to early education. Each of the sponsored Follow Through approaches is intended to offer an alternative to the kinds of school experiences traditionally encountered by poor children during their primary school years.

In the interim evaluation, this concept of "planned variation" represents the "treatment" whose impacts are being evaluated. As shown in preceding sections, some sponsors emphasize changes in parent-school communication patterns, others concentrate on influencing parent-child interactions, and nearly all attempt to affect teacher-child interactions in the classroom. The parent and teacher outcome measures obtained during the first year of the children's FT experience can be considered as evidence of the implementation of treatment. A separate study of community factors is designed to assess changes in parent-school relations, which can, in turn, be considered as important mediators of child outcomes.

This interim evaluation does not purport to test a definitive model of factors causally related to child achievement and affect. Moreover, an assessment of all possible determinants of child outcomes is beyond the scope of this evaluation. In fact, many such possible determinants may still be latent now, and their detection will be dependent on subsequent assessments.

To the extent that we can observe reliable components that systematically occur in classrooms within a planned variation, we have some evidence as to what comprises these treatments. Moreover, it is through these classroom observation data that we have our best evidence that treatments, as such, even existed. The existence of evidence of implementation of the various FT treatments contrasts with a lack of documentation of treatment in several other compensatory education programs (Wargo, 1972). We present here evidence that FT sponsors have, in fact, implemented treatments at the classroom level (as administered by teachers) that are discernibly different from activities observed in comparison schools or in other FT-sponsored schools.

Evidence of Differential Treatments

Evidence used to assess and to evaluate the occurrence of systematic classroom components comes from data obtained for the classroom observation sample of 1970 to 1971. This sample, summarized in Table 102, consisted of 123 classrooms, distributed across 2 grade streams and 2 cohorts, in 17 different projects.

TABLE 102

DISTRIBUTION OF CLASSROOMS IN THE CLASSROOM OBSERVATION SAMPLE

		COHORT I		COHORT II		
GRADE STREAM	GROUP	NON-ENTERING FIRST GRADE	SECOND GRADE	KINDERGARTEN	ENTERING FIRST GRADE	PROJECTS
KINDERGARTEN	FT	33	--	33	--	
	NFT	8	--	8	--	12
ENTERING	FT	--	14	--	17	
FIRST	NFT	--	5	--	5	5
TOTAL		41	19	41	22	17

A few classrooms in which observations occurred were not included in classroom testing in Spring 1971. Thus, the observation sample is not fully nested within the set of projects and classrooms for which analyses of test data were possible. The overlap is substantial, however, and in all projects in which both testing and classroom observation took place, process data obtained from the observations are included in the tables of outcomes.

The evidence to date is not definitive regarding the existence of approaches that differ systematically from one another and are also consistent from place to place within an approach. These data do strongly suggest, however, that there are some reliable differences between sponsors and that, for many process variables, there is reasonable consistency from classroom to classroom across projects within a sponsored approach.

To summarize the outcome tables, we have displayed factor scores derived from the observations. These factor scores provide a qualitative indication of process characteristics within those projects where observations were conducted. Informal analyses of factor score profiles suggest substantial homogeneity across classrooms within sponsor categories for some factors and considerable heterogeneity across classrooms within sponsor categories for other factors.

For seven of the nine sponsors included in the sample, observations occurred in two different projects, thus enabling analysis of interproject process consistency. Before summarizing this examination, it is important to emphasize that sponsor and district or project influences are confounded; i.e., to the extent that process regularities occurring in observed classrooms are more a function of district influences than sponsor influences, our interpretations of these regularities as treatments will be in error.

Despite these interpretive caveats, visual examination of the factor profiles supports two interpretations:

(1) Reasonable similarity exists between projects within sponsor categories on some factors.

(2) The two factors for which there is the least apparent intersite difference within sponsors are also the factors that reveal the most consistent intersponsor differences.

Table 103 summarizes the results of judgmental interpretation of factor scores across classrooms within and between projects for each of the seven sponsor categories in which observation occurred in two different projects. This table shows that for the self-regulatory and programmed academic factors, apparent differences between groups of classrooms in two different projects were small for nearly all sponsors. In contrast, most of the seven sponsors show higher variability across two groups of classrooms for the remaining three factors. The sponsors differed somewhat on their apparent consistency for certain factors. For example, while the self-regulatory and programmed academic factors appeared to differentiate reasonably well among the set of seven sponsors, additional factors may also be characteristic of a particular sponsor. For example, FW projects showed reasonable similarity between two project locations on the self-regulatory factor, the programmed academic factor, and the child self-learning factor; and UA projects showed reasonable similarity on the self-regulatory factor, the child-initiated interaction factor, and the programmed academic factor.

TABLE 103

INTERPROJECT DIFFERENCES WITHIN SPONSOR CATEGORIES FOR FACTOR SCORES

	FACTORS				
SPONSOR	SELF-REGULATORY	CHILD-INITIATED INTERACTIONS	PROGRAMMED ACADEMIC	EXPRESSIVE	CHILD SELF-LEARNING
FW	–	*	–	*	–
UA	–	–	–	*	*
BC	–	*	–	–	*
UO	–	*	–	*	*
UK	–	*	–	*	*
HS	–	*	*	*	–
UF	*	–	–	–	*

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[*] = Apparently large interproject differences within sponsor categories.

[–] = Apparently small interproject differences within sponsor categories.

As noted above, the two factors for which sponsors tended to display the most interproject consistency were the self-regulatory factor and the programmed academic factor. Figures 9 and 10 show sponsor average factor scores (i.e., averaged across classrooms) for the self-regulatory and the programmed academic dimensions, respectively. It is difficult to avoid an impression of intersponsor difference from these graphs.

Analyses of variance were subsequently performed on each of the 41 discrete variables that served as input to the factor analyses.[*] These further analyses were of two forms: (a) comparison of average FT versus

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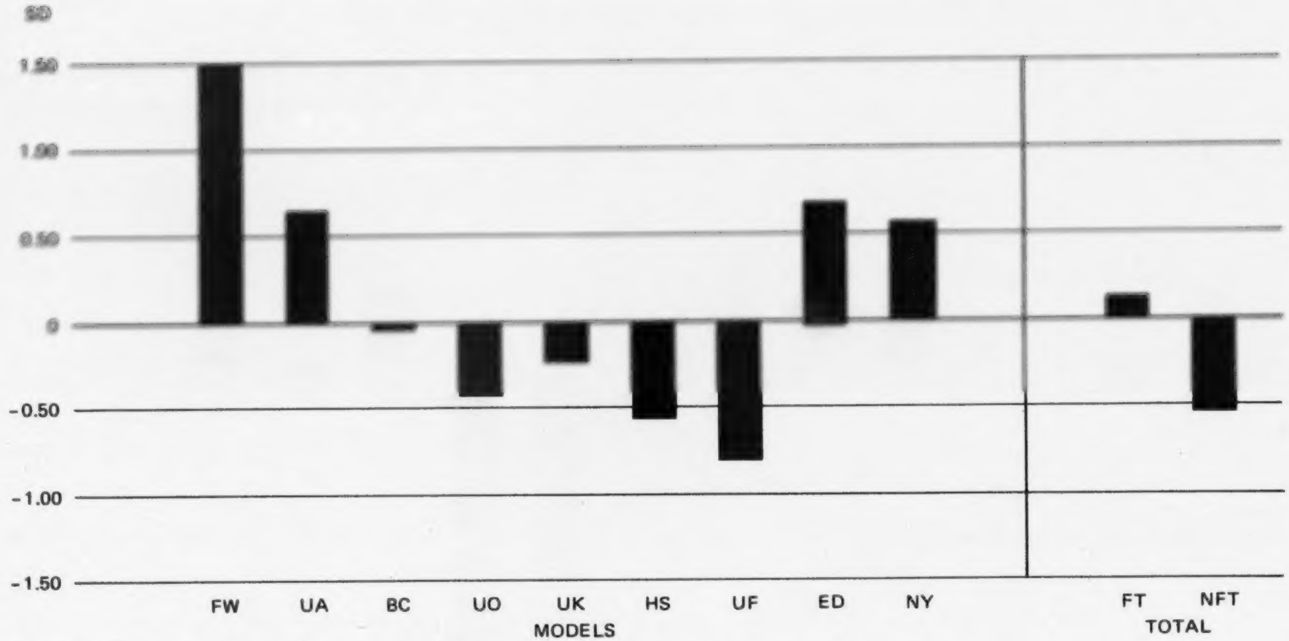
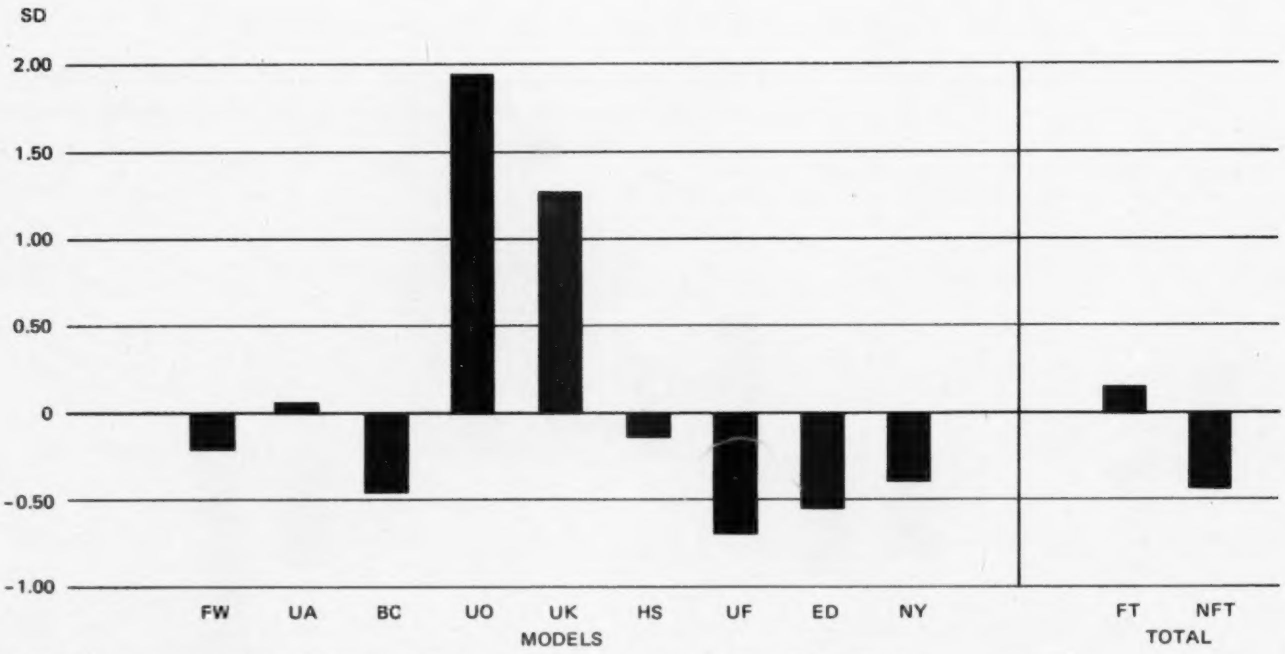
[*] Discussion in this report is restricted to the 41 variables used in the factor analysis. Additional details, as well as examination of nearly 30 additional variables, are presented in the SRI report, "Follow Through Classroom Observations" (1972b, Appendix B).



- The differences among Follow Through models appear greater than would be expected by chance.
- The difference between total Follow Through and Non-Follow Through appears greater than would be expected by chance.

FIGURE 9 SPONSOR SCORES FOR THE SELF-REGULATORY FACTOR



- The differences among Follow Through models appear greater than would be expected by chance.
- The difference between total Follow Through and Non-Follow Through appears greater than would be expected by chance.

FIGURE 10 SPONSOR SCORES FOR THE PROGRAMMED ACADEMIC FACTOR

NFT values averaged across all FT/NFT classrooms, and (b) intersponsor comparisons of means. The first analysis served to point up process components that differentiate FT from NFT. The latter analyses provide a basis for qualitative validation of planned variations on a variable-by-variable basis.

Results of the across-sponsor comparisons reveal consistent and significant FT/NFT differences for all process variables directly related to the number of adults involved in classroom activities and for a number of other variables that are probably (but not certainly) related to adult-child ratios. Only one process variable that may be independent of adult-child ratios displayed significant FT/NFT differences. This pattern of results is shown in Table 104.

In Table 104, variables that significantly differentiate between FT and NFT classrooms are grouped in terms of apparent relationship to the number of adults in the classroom. These variables are listed in terms of the direction (FT or NFT) of the difference.

Since the evidence clearly indicates that FT/NFT treatment differences are strongly dependent on adult participation in the classroom, a tabulation of adult-pupil ratios observed in these classrooms was made. The results of this tabulation, displayed below, show how different the two groups really are on this variable.

Ratio	Follow Through (N = 97)	Non-Follow Through (N = 26)
Maximum	1 to 3	1 to 7
Average	1 to 6.8	1 to 12.8
Minimum	1 to 14	1 to 33

We feel that this result is important because a favorable adult-child ratio is a necessary condition for the implementation of many critical features (or treatment components) of the planned variations. Evidence for the implementation of planned variations at a more detailed level than sheer adult-child ratio is available. Sponsors report preservice and inservice training for aides as well as for teachers. Observation data reported more fully elsewhere indicate that not only are there more aides in FT, but also that they function differently in the academic program in the classroom than do NFT aides.

Table 104

PROCESS VARIABLES THAT DIFFERENTIATE* BETWEEN FT AND NFT CLASSROOMS

Relation of Process to Adult-to-Child Ratio in the Classroom	Characteristic Processes	
	Follow Through	Non-Follow Through
Almost certainly directly related to number of adults	Adult with one or two children in academic activities Adult with small groups of children in academic activities Aides participating in academic activities Adult communication focus on small groups of children	Adult communication focus on large groups of children Adult informing children
Probably related to number of adults	Arts, crafts, sewing, cooking, pounding activities Blocks, trucks, dolls, dress-up activities Guessing games, table games, puzzles Independent child activities Snacks, lunch, group time Wide variety of activities	--
May not be related to number of adults	Academic activities	--

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[*] Differences between FT classrooms (N = 97) and NFT classrooms (N = 26) were statistically significant ($p < .05$).

The results of the intersponsor analyses for process variables are summarized in Table 105, which presents the rank order of sponsor mean values for each of the 41 variables analyzed. The aggregate NFT value is represented by an arrow in each such array. The Newman-Kuels procedure for multiple comparisons was employed to test for differences among all possible ordered pairs within each array. The results of these tests are represented by the underscores. Within an array, any two sponsors not underscored by a common line differ significantly at $p < .05$. For example, in Table 105, Variable 1, the UO mean, is significantly different from the HS, UF, NY, BC, and FW means, respectively (not underscored by the same line) but not significantly different from UK, ED, or UA (underscored by the same line). Similarly, the UA mean differs significantly only from the BC and FW means on Variable 1. Finally, the ED and UK means are not significantly different from any other sponsors (i.e., they share at least one common underscore with all other means) on this variable.

Obviously, Table 105 contains a tremendous amount of information. Rather than attempt a laborious interpretation of the results for each of the 41 variables, we will discuss the results for just a few key variables. For example, Variables 8 (small group instruction), 11 (wide variety of activities), and 13 (participation of an aide) all clearly show striking FT/NFT differences; virtually all sponsors average above the pooled NFT. These results are interpreted as clear evidence of discernible FT treatments that exist at the classroom level and that involve individualized or small group approaches and wide varieties of activities (such as games and puzzles--see Variable 5).

Inspection of differences for several interaction variables (14 through 41) further validates the existence of several of the more highly defined planned variations. For example, all sponsors are below NFT on the relative occurrence of teacher didactic behaviors (Variable 19), and yet, the rank order of sponsors on this variable corresponds quite well to that predicted on the basis of the model descriptions (i.e., UF, UK, UO are among the highest and FW, NY, HS, and ED are among the lowest). Similarly, both UK and UO are highest on the relative frequency of teacher praise (reinforcement--Variable 32), whereas ED is lowest and NFT is in the middle. FW--the "responsive environment" model--averages highest on Variable 33 (adult positive corrective feedback).

This method of interpretation of results is highly qualitiative and subjective. However, in the absence of rigorous evidence of both the quality and extent of program implementation, and in the absence of unitary criterion measures, we feel these data are consistent with many of the key descriptive features of the model. Pending further, more intensive analyses on larger and more representative data, we offer the following

TABLE 105

OBSERVED SPONSOR DIFFERENCES FOR CERTAIN CLASSROOM PROCESS VARIABLES

PROCESS VARIABLES	SPONSOR MEAN* LOW — HIGH
Activities (CCL)	
1. A-Lunch, snack	UO, UA, ED, UK, HS, UF, NY, BC, FW
2. B-Group time, story, singing, dancing	UO, UK, NY, UF, BC, HS, UA, FW, ED
3. C-Arithmetic, numbers, math., reading, alphabet, language development	ED, UF, BC, HS, FW, NY, UA, UK, UO
4. D-Social studies, geography, science, natural world	UO, UF, UK, NY, BC, UA, FW, HS, ED
5. E-Games, puzzles	UO, UF, UK, UA, HS, BC, NY, ED, FW
6. F-Arts, crafts, sewing, cooking, pounding, sawing	UF, UK, NY, UO, HS, BC, FW, UA, ED
7. G-Blocks, trucks, dolls, dress-up	UO, UF, NY, UK, HS, UA, FW, BC, ED
8. Adult with small groups in academic activities	ED, UF, FW, BC, NY, HS, UA, UK, UO
9. Academic activities	ED, UF, HS, BC, FW, NY, UA, UK, UO
10. Independent child activities	UF, UO, HS, UK, BC, UA, NY, ED, FW
11. Wide variety of activities	UF, UO, NY, BC, HS, UK, UA, FW, ED
12. Adult with one or two children in all activities	HS, NY, UO, UF, UA, UK, BC, FW, ED
13. Aide participating in academic activities	ED, NY, BC, HS, UF, FW, UA, UO, UK
Interactions (FMO)	
14. Adult informing child symbolically	NY, UA, UO, HS, FW, UF, BC, UK, ED
15. Adult asking child a direct question	FW, UF, BC, UK, ED, HS, NY, UA, UO
16. Direct question followed by child response	FW, UF, BC, UK, ED, HS, NY, UA, UO
17. Adult praise and corrective feedback	UF, ED, UA, FW, NY, BC, HS, UK, UO
18. Child response followed by adult feedback	ED, UK, UA FW, NY, BC, UF, HS, UO
19. Adult informing child	FW, NY, HS, ED, BC, UA, UF, UK, UO
20. Adult asking child thought-provoking questions	UO, NY, ED, FW, UK, BC, UF, UA, HS

↑ = Mean for aggregate of NFT classrooms observed (N = 26).

*Sponsor means on each variable are ordered in increasing magnitude. Underlining indicates subsets of no significant difference ($p < .05$) between sponsors, as determined by the multiple range test, Newman-Kuels method.

TABLE 105 (Concluded)

PROCESS VARIABLES	SPONSOR MEAN LOW — HIGH
21. Adult informing child with concrete objects	UO, NY, ED, BC, UA, UF, FW, HS, UK
22. Adult acknowledgment	ED, UK, FW, UF, UA, UO, BC, NY, HS
23. Child informing himself with objects	UK, FW, BC, UF, UA, ED, HS, NY, UO
24. All child's self-learning	NY, UF, UA, FW, BC, ED, HS, UK, UO
25. Child informing another child	ED, UO, UF, NY, UK, BC, FW, HS, UA
26. Child informing himself symbolically	NY, UA, UF, FW, BC, ED, HS, UO, UK
27. Child questioning adult	UK, UF, UO, BC, ED, NY, HS, FW, UA
28. Child's self-expression	UO, UK, ED, HS, UF, BC, UA, FW, NY
29. Adult communication focus--one or two children	ED, NY, UF, FW, HS, UO, UA, BC, UK
30. Adult communication focus--small group	FW, BC, UA, NY, UF, HS, UK, ED, UO
31. Adult communication focus--large group	UO, HS, NY, UK, UA, FW, BC, ED, UF
32. Adult praise/acknowledgment of child	ED, UA, FW, UF, BC, NY, HS, UK, UO
33. Adult positive corrective feedback	UF, ED, HS, NY, UA, BC, UK, UO, FW
34. Adult negative corrective feedback	UF, UO, ED, UK, FW, NY, HS, UA, BC
35. Adult negative affect	UO, FW, NY, UA, ED, UK, HS, BC, UF
36. Child negative affect	UO, ED, UF, BC, UA, NY, FW, UK, HS
37. All negative affects	UO, ED, UF, BC, UA, NY, UK, FW, HS
38. Adult to child positive affect	NY, BC, UO, ED, UK, UA, UF, HS, FW
39. Child to adult positive affect	UO, UF, NY, ED, BC, UK, UA, FW, HS
40. All positive affect	ED, NY, BC, UK, UO, UF, UA, HS, FW
41. Child positive affect	ED, UF, UO, BC, HS, NY, UK, UA, FW

evaluation of FT treatments, based on classroom observation evidence:

(1) Sponsored approaches do discernibly differ from one another for many process variables.

(2) Processes characteristic of various FT approaches predictably depart from characteristics observed in NFT classrooms for many process variables.

(3) Analysis of factor scores and discrete variable scores presents strong evidence of instructional activities and components that correspond well with descriptions of intended approaches, thus validating in part the concept of planned variations in FT treatments.

Section V

DISCUSSION AND RECOMMENDATIONS

Section V

DISCUSSION AND RECOMMENDATIONS

The discussions and recommendations presented in this section are based on our experiences in dealing with the intricate and often difficult problems encountered in this massive and unprecedented evaluation of a nationwide intervention program. We have attempted to focus these discussions on issues pertinent to an evaluation of programs like Follow Through and have tried to remain objective throughout. The section is divided into the following three parts:

(1) Discussion of the interim results and recommendations for improving the evaluation of Follow Through

(2) Recommendations concerning evaluations of future education and social action programs

(3) Recommendations for specific policy decisions regarding compensatory education programs.

Discussion of the Interim Results and Recommendations for Improving the Evaluation of Follow Through

The results described in the preceding section present a complex picture of findings. We would like to be able to present a simple and concise statement of interim effects, but feel that we cannot do so at this time. Many of our interpretive difficulties are due to the problems described in the following paragraphs. We feel that any conclusions drawn from this interim evaluation must be considered in light of these problems.

The samples on which these interim results are based are small, certainly too small to allow us to isolate approaches that "work" and approaches that do not. We can conclude that some changes are taking place, but we do not yet know precisely what they are or why they are occurring. At a more general level, the parent, teacher, classroom observation, and community data indicate that Follow Through is succeeding in measurably altering adult attitudes and behaviors in the home, the school, and the community. Evidence that these changes in adults are having impact on the children is less marked and more variable, but results tend to indicate positive effects on FT pupils. It is likely that in future analyses on larger and more representative samples, evidence of program impacts on pupil attitudes and achievements will be considerably more marked.

In addition to the limitations imposed by the relatively small interim evaluation samples, we encountered complex problems of missing data. These resulted from high attrition and, occasionally, inadequate baseline data. The magnitude of these problems was greater than anticipated at the beginning because of the unprecedented nature and scope of this research program. And, although we now know how to cope with them, they restrict our ability to generalize about findings for Cohort I samples, and to a lesser extent about findings for Cohort II samples.

Since Follow Through is a quasi-experiment, the allocation of treatments to projects and the allocation of units to treatment or control conditions within projects were nonrandom. One consequence of this nonrandomness was that biases were introduced into the design. The bias associated with the allocation of treatments to projects may not be very serious. But the nonrandomness within projects (i.e., systematic differences between FT and NFT samples) occasionally has serious consequences. For example, in some projects, treatment and comparison groups were very different. Although such differences are bound to occur in pseudo-experiments for which control groups are assembled post hoc, they present serious obstacles to the interpretation of outcomes. And where comparison group biases are severe, we suspect they invalidate the results of analyses for the projects affected.

These problems (missing data, differences between comparison and treatment groups, and too few classrooms per project) combine to produce relatively low statistical power in our analyses for effects. To some extent this outcome was expected, since Office of Education and SRI made conscious decisions to concentrate data collection efforts at the entry grade (K or EF) and at the exit grade (3) and to devote less effort at the intermediate grades. Nevertheless, we are quite likely failing to detect many important program impacts at this interim point.

As suggested above, a substantial number of program impacts are evident in our analyses of interim data. Furthermore, we believe that the true magnitude of the effects is probably somewhat greater than detected by our analyses. But it is important to recognize that even if the number of significant effects were strikingly greater, we would still have difficulty interpreting how or why such results occurred because, at present, our current knowledge of the treatments is confined almost exclusively to the sponsors' descriptions of them. We do have evidence from limited subsamples on some of the characteristics of some processes. This qualitative evidence indicates that classroom processes conform to these treatment descriptions. To interpret how and why results occur, we now need clear operational statements of what a sponsor does when he is installing and maintaining a project and how he does it.

Finally, because of the complexity and variety of the intervention approaches, or treatments, in the FT experiments, it is very likely that many of the evaluation measures used were not uniformly appropriate, sensitive, or relevant to varied objectives. Many program objectives were probably overlooked in our assessments. The technology for evaluating large scale social programs is in its infancy. We believe that we have contributed substantially to the advancement of this technology through our successful and unsuccessful experiences with evaluation instruments and procedures. Yet there remains much more to be learned.

In sum, the data available for this interim evaluation were sampled from a limited set of projects and are not adequate for comparing the effectiveness of different program approaches. Some rather serious problems with baseline data, comparability of FT and NFT groups, and general attrition further hampered analyses. That quite a few significant effects emerged (beyond an "experiment-wise" error rate) in spite of these data analysis problems is certainly noteworthy.

When the pupil results are reviewed within the perspective of the overall evaluation design, the likelihood of obtaining a significant effect appears to be associated with several rather crucial evaluation parameters. In particular, the magnitude and frequency of FT-favoring pupil results appear related to:

- The relative comparability of families in the FT and NFT samples within a project (quality of match). That is, as the quality of the match improves, the frequency and proportion of FT-favoring results also tend to improve. That bad matches tended to result in NFT-favoring results is primarily because the initial biases were extreme in favor of NFT, often suggesting that two separate populations were being compared.
- The severity of impoverishment and disadvantagement relative to the main-stream social structure. Projects in the most impoverished communities showed some of the most dramatic gains, but these were sometimes statistically unreliable and often confounded with comparison group problems. This trend may indicate the presence of a type of floor effect, but more likely it is associated with major differences in the social complexities of rural and urban communities.

- The amount of time the sponsor has had to refine and improve implementation of his treatment. In general, first-year impacts for 1970 samples (C-II) were stronger than for 1969 samples (C-I). Although this trend is confounded by certain measurement difficulties associated with the first-year, Cohort I data, the differences appear large enough to support our interpretation.
- The grade level of the pupils and the amount of time they spent in the program. This interpretation is suggested by the fairly regular cumulative trend observed for the Cohort I-K samples (second-year effects were almost always stronger than first-year effects). Also, the effects on Cohort II-EF samples (pupils in the first grade) tended to be larger than those on Cohort II-K samples. These trends do not obtain for Cohort I-EF samples probably because of the proportion of "good" matches in these samples was very low (i.e., 14 percent for Cohort I-E versus 50 percent for Cohort I-K).

When the four trends evident at this interim point are combined, it appears that Follow Through has most often been successful in projects located in truly disadvantaged communities when there has been enough time to implement the model properly. In addition, the effects appear cumulative, and impacts appear stronger at higher age levels.

Admittedly, we may be stretching the available evidence to generate these specific interpretations. But it is definitely no exaggeration to conclude there is evidence of impact. Furthermore, given all the uncontrolled variation and lack of rigor represented in this "pseudo-experiment," it would not have been surprising if such evidence were altogether absent.

This point deserves further clarification. At the outset of the Follow Through experiment some planners apparently expected that the impact of Follow Through on poor children would be so dramatic that it would be clearly evident, independent of sophisticated inferential statistical methods. That this expectation was overly optimistic probably should have been anticipated, since, in many instances, laboratory and field experimental data have yielded only moderate-sized effects under highly controlled conditions. In Follow Through, the treatments are administered by teachers and parents, not by trained experimenters. Furthermore, we must assume (although we do not know) that some changes or losses occur because of imperfect implementation of the models; perfect implementation could hardly be expected. And, since degree of impoverishment is a dominant eligibility component for obtaining an FT grant, understandably the truly poor schools within districts were quickly absorbed into the treatment. This made the task of finding comparable NFT schools and families difficult, and occasionally impossible. Lack of comparability often meant that, to be clearly detected, a FT impact must emerge over and above a whole host of competing factors and extraneous sources of variance, many of which recently have been demonstrated as determining the great majority of pupil outcomes (see Coleman et al., 1966; Jencks et al., 1972; Mosteller & Moynihan, 1972). In many laboratory and field experiments on educational treatments the results have been modest, often showing effects of a standard deviation or less even when competing factors and extraneous sources of variance are controlled or held at a minimum (Gray & Klaus, 1965; Hodges, McCandless & Spicker, 1967; Passow, in press).

It is an understatement to argue that treatments developed in the laboratory would be suboptimal in a natural setting. Hence we must ask the question, "How large do we expect the impacts of the various FT approaches to be after one year? After two years?" For some of the models represented as treatments in this evaluation, results from laboratory and field experiments suggest an answer. But for the majority of the models, there is no way of even guessing. For those treatments that have been validated experimentally, the effects detected were generally approximately one standard deviation--under highly controlled conditions (i.e., the mean of the treatment was not greater than two standard deviations from the mean of the control). Without these controlled conditions, as in the FT program, the effects most likely decrease in apparent magnitude, and correspondingly their detection becomes less likely.

The Need for More Precise Treatment Definitions and Descriptions

We view the absence of careful and precise definitions of FT treatments and their associated delivery systems as one of the more serious gaps in the total Follow Through evaluation. By a definition of treatment, we mean operational statements of the specific manipulations the sponsor intends to implement within the project. By delivery system, we mean the actual materials and procedures he employs to affect this implementation. One basic reason for the Follow Through experiment is to provide a testing ground for the wide variety of both implicit and explicit hypotheses and theories that have been advanced to explain why disadvantaged pupils perform poorly. These implicit or explicit theories presumably served as the bases for the intervention treatments, the effects of which are the subject of this evaluation. But in the current situation when we encounter program failures or negative results, we have no way of knowing, or sometimes even guessing, why. It could be because the theory is wrong or because some or all of the treatment was not properly implemented.

The necessary linkage between the specification of treatment and evidence of impact is missing because at present we do not know the literal materials and procedures that a given sponsor employs in setting up his model in a particular project. It is true that the evidence obtained from the classroom observation procedures indicates that FT teachers tended to exhibit behaviors that, more often than not, were consistent with the relevant features of their respective models. But this evidence is insufficient for several reasons. First, this classroom observation evidence indicates the extent to which certain implementations are occurring; it does not tell us specifically how implementation was originally accomplished or specifically how it is maintained. Second, we currently have no rigorous independent evidence of the extent to which the presence of the observer influenced the behaviors of the teacher (pseudo-treatments), or the extent to which observer bias existed. Third, only a subset of models attempt to operate directly on the teacher and classroom process. For several approaches, the parent, home, and community are the vehicles by which the model becomes implemented.*

Thus, if the longer-range evaluation of Follow Through is to have any payoffs in terms of the identification of "significant" treatments or treatment components (i.e., those treatment components to which significant outcomes have been or can be attributed), necessary descriptions of treatments and delivery systems must be collected and classified for appropriate future analyses. Without these data, it is very unlikely we will ever understand the reasons that certain programs worked, and even more unlikely that we will be able to describe how to "export" successful approaches to other contexts or situations.

Competing Goals of Follow Through

It is apparent that considerable confusion and ambiguity exists concerning the goals of FT and its concomitant evaluation. The same array of stakeholders are present as were present when the program began, and a few others have joined. The major bifurcation is between those, on the one hand, who (consistent with the intent of the original legislation) believe that the Follow Through program was designed to enable low-income families to participate in the administration of comprehensive services being provided to their children through the school and those, on the other hand, who wish to find out the ways in which 20 or so educational innovators with different educational philosophies and techniques can improve the level of achievement and enhance the self concepts of poverty children.

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* These comments are not intended to detract from our previously stated confidence in the reliability of classroom observation findings. Indeed, our observed patterns were anecdotally corroborated by sponsors and other observers, and the agreements among raters appeared reasonably high, suggesting that observer bias is not a major factor.

The former group, which includes not only most parents but also some of the Local Education Agencies and even a sizable group of Federal program officers, appears positive toward Follow Through and seems convinced that the programs are accomplishing the goals. Our own data show that FT families become involved in their child's education and regard the program positively. The interim results do not yet allow us to say whether early results on parental variables reflect a general phenomenon like the "Hawthorne effect." Parents certainly appear pleased that something is being done for their children even when they are unsure of the nature of the programs. It may be that parents' responses indicate that they are aware of effects on their children that have not yet been detected by the evaluation data.

In any case, evaluative evidence is not of crucial relevance to this group. They feel Follow Through is a demonstration of what can be done when everyone works to improve conditions. Understandably, to these stakeholders, the requirements of experimental rigor must appear irrelevant and superfluous. These attitudes, though beneficial to the program in many ways, become deleterious when we seek to establish comparison groups whose performance we contrast with that of FT groups as a measure of program effectiveness.

This interim evaluation has shown that for several projects the comparison group samples consist of pupils and families not at all like the FT project samples. We know that reasonable effort was extended in attempting to obtain proper matches for experimental purposes. But not only are truly poor families within a project disproportionately represented in the FT groups (since they compose the subgroup for which the program was intended), but also it is difficult to see how similar and eligible families within the same district could long be prevented from either (a) enrolling their children in FT schools or (b) encouraging their own schools to adopt FT-like methods. Both of these actions are natural, even desirable, but they have negative consequences on the longitudinal evaluation design. In fact, a serious question arises as to whether or not we should continue the expense of data collection for projects where attrition and matching problems are severe.

Most compromised by the program-versus-research dilemma are the sponsors. On the one hand the sponsors are advocating intervention models and providing delivery systems, so they have a definite stake in a good evaluation. They would want the evaluation design to have as many safeguards as possible to avoid biased or invalid assessments of their effectiveness. Most are also interested in reliable and useful feedback information on outcomes so that they can improve their approaches. On the other hand, they are sensitive to the importance of participant "good will" to make their approach successful,or, in some cases, to make its implementation even possible. In this sense, the sponsor must consider his every action in terms of its consequences not only on the overall evaluation of his model, but also on how it affects relationships with the parents who have served as classroom aides and who, as PAC members, have shaped the programs to fit the community and vice versa and who, the sponsor may believe, are crucial to the effectiveness of his model.

Problems in Measurement

Another serious impediment to clarity of evaluation results appears to be in the very nature of the kinds of results many of us are looking for. For example, the simplest way to increase the apparent clarity of results is to utilize measures that are both reliable in themselves and externally valid (sensitive to treatment effects). Achievement measures are generally reliable and face-valid, but they are differentially relevant to various program objectives. That is, nearly all models purport to have impacts on pupil achievements, but descriptions vary as to how and when these impacts will emerge. Similarly, in all FT models, the development of positive affect in one form or another is considered a goal. In some FT approaches, the emergence of this positive affect is considered necessary for meaningful learning to occur. In other approaches, a positive self-image is considered a consequence of successful academic achievement. Unfortunately, regardless of one's theoretical predisposition toward the construct, currently available measures of pupil affect show poor--almost unacceptable--reliability (as do most noncognitive measures). Since validity is dependent on reliability, these measures are not highly useful in their current state of development.

Another strategy might be to compile separate assessment batteries tailored to the goals and objectives of each model. This strategy would certainly enhance the validity of conclusions in the evaluations of individual approaches, but would seriously impair, if not preclude, one's ability to draw inter-approach conclusions. In fact, early attempts to construct a comprehensive evaluation battery made extensive use of sponsor-contributed items, but in the long run this procedure satisfied no one and, by 1971-72, was abandoned in favor of standardized or "off the shelf" instruments.*

Establishing the temporal relevance of evaluation measures to the long-range goals of the program presents still another problem. The general objectives of improving the life chances of poor children suggest that what are needed are sets of measures that validly predict (or diagnose) the long term life chances of such children. In addition, these measures would have to be appropriately sensitive to the effects of specific treatments. The only set of measures that even comes close to meeting these requirements in the current interim data are the achievement scores. But current research (Jencks et al., 1972) has called even these measures into question in terms of their predictive validity and utility.

We feel that this problem of predictive validity of the evaluation measures will probably not be resolved in the near future. What seems more likely is that appropriate developments and advancements in theories of instruction should lead to the specification of criterion skills and behaviors, the attainments of which will be both testable and useful as ends in themselves. Similarly, we expect that the ambiguity currently associated with noncognitive objectives will be resolved either by specifying theoretically relevant criterion behaviors or by abandoning the domain as impractical.

Another related measurement issue is the need for clarification of certain paradoxical or equivocal response patterns obtained from our survey instruments. The most striking example comes from teachers' responses. FT teachers tended to indicate that they approved of their current teaching methods and procedures; that is, they were less interested in alternatives than were NFT teachers. Yet FT teachers also tended to answer that meeting with parents was less essential than the NFT teachers believed it was. Almost without exception, FT methods prescribed greater adult participation in the classroom. If we are to assume these measures are reliable and valid, then at least three interpretations can be advanced:

- FT teachers are pleased with parent assistance, but they do not feel parents should be directly involved in educational activities.

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*The current (1972-73) battery consists of the Metropolitan Achievement Test (1970 edition), the Progressive Matrices Test (problem-solving), and selected noncognitive instruments (the I.A.R., Gumpgookies, Locus of Control, and Coopersmith Self-Esteem).

- FT teachers are pleased with parent assistance and since they are in classroom contact with them, the teachers see less need for outside contacts.
- FT teachers are not pleased with parent participation and are responding to other factors on the "professional acceptance" measure.

Our problem is that, based on the current data, we have no way of choosing which of these (or possibly other) interpretations is correct. But since the measures often reliably differentiated between FT and NFT teachers, it would be unfortunate if at least some follow-up activities were not instituted to resolve these ambiguities.

A similar example from the parent interview variables is found in the "satisfied with progress" and "academic expectations" measures. On these measures, FT parents more often indicated satisfaction with their children's progress than did NFT parents. On the other hand, NFT parents tended to have higher overall academic expectations for their children than did FT parents. If we accept these results as valid, then FT parents definitely have lower aspirations for their children (i.e., they tend to be more satisfied with less progress and are less optimistic about future growth). On the other hand, FT parents may be more realistically appraising the educational situation of their children, whereas NFT parents are less realistic. Again, additional information would be useful for resolving this interpretive problem.

Attrition and Its Implications

Some preliminary evidence suggests that some rather serious problems will likely be encountered in the final stages of this longitudinal evaluation because of apparent patterns of differential FT/NFT attrition. Our current tracking data show that the half-life of the comparison samples is about two years. (That is, the size of the comparison sample reduces by one half every two years, on the average). Thus, by the end of four years in this longitudinal study, only about one-fourth of the original comparison group is expected to be available for assessments. Although the attrition rate is considerably smaller for FT (half-life of about three years), it will be very difficult to draw valid inferences of effects, given what is likely to be a nonrepresentative residual of an already biased comparison sample.

It might well be prudent to begin considering alternative strategies, one of which might involve a shift to cross-sectional matched sampling, for the outcome data collection among exiting cohorts. This shift in strategy would, of course, mean that the longitudinal nature of the experiment would be replaced, in some (or, possibly, all) projects, by a broader based, cross-sectional model. Moreover, our regression analyses have shown that over 60 percent of the variance accounted for by all covariables can be attributed to parent/home/environment indexes. Thus, if careful matching is implemented, a cross-sectional design might restore most of the power initially represented in the longitudinal design but lost because of attrition.

Summary of Recommendations for the Continuing FT Evaluation

On the basis of evidence and discussion presented in the body of this report, we advance the following recommendations, which we feel will enhance the quality and utility of the final FT evaluation.

(1) Clear and precise operational definitions of sponsor "treatments" and equally precise descriptions of their delivery systems are needed to improve understanding of how and why these treatments are or are not effective. This information should be obtained as soon as possible, since it will be relevant to the evaluation of currently exiting cohorts, and essential if the findings are to be applicable to new situations.

(2) Analysis of statistical power for detection of treatment effects at the project level indicates that the number of classrooms per project is insufficient for the detection of moderate or small effects. If possible, the number of classrooms (FT and NFT) per project should be increased.

(3) For many projects, NFT comparison groups were not considered sufficiently similar to FT groups to enable a valid analysis of program impacts. Unless comparability of these comparisons can be improved by means of alternative designs (e.g., matched pairs, cross-sectional), we recommend that these "mismatched" projects be deleted from subsequent data collections.

(4) The magnitude of the attrition problem appears to be far greater than initially estimated, particularly for the NFT sample. It appears that over a four-year duration, NFT pupil attritions range as high as 80 percent of the baseline sample. We strongly recommend alternative evaluation designs be studied for possible adoption in the near future. One highly feasible alternative appears to be a matched pairs, cross-sectional design.

(5) Although we believe that the current (1972-73) evaluation battery is adequate in many respects, the possibility of gathering sponsor-specific measures should be reconsidered. Given the divergent goals of the different approaches, such measures would provide alternative bases on which to assess impacts.

(6) Alternatives to the current noncognitive measures should be considered. One such alternative might be the use of classroom observation data to index patterns of personal and social growth and development.

(7) The classroom description component (CCL) of the classroom observation should be utilized more frequently and extensively in subsequent data collections to better characterize overall classroom practices and emphases. The possibility of continuous sampling on case study bases should be considered.

(8) Further investigation of teacher and parent attitudes and behaviors is needed to resolve ambiguities in a number of important effects noted in these interim data.

Recommendations Concerning Evaluations of Future Education and Social Action Programs

The Need for Planning the Evaluation

Evaluation of Follow Through has demonstrated to us that it is essential to have a formative period before a summative evaluation of any social action program is begun. The formative stage is required to clarify the purposes of the evaluation. It is also needed for defining evaluation questions and hypotheses, clarifying and understanding the nature of the alternate treatments or procedures that will be assessed, and assembling and sharpening the tools of measurement. Hopefully, in addition, some of the conflicts common to all social experiments can be explicitly recognized and reconciled during the period.

One issue that demands attention during the planning stage is the state of the art in both measurement and statistical analyses. The temptation in undertaking an evaluation is to assume that procedures can be rapidly developed or that ways to deal with problems of measurement and analysis will emerge. There is, however, great danger in basing one's plans on the assumption that such developments will occur. A simple example can be cited from Follow Through. While the importance of measures in the noncognitive domain was clearly recognized, neither the limitations in existing instruments for use in large-scale measurement applications nor the difficulties inherent in effecting new developments were equally clearly recognized, and certainly not on a schedule that would be useful to the evaluation. Evaluation planning, in short, should be limited to the state of the art as known or best estimated at the time the evaluation begins so that unrealistic expectations about new developments can be avoided. If it is decided that development efforts and evaluation activities should be undertaken simultaneously, these activities should not be made time-dependent on one another. The evaluation can be used as a vehicle for development, but the pace of development should not be tied to the evaluation schedule, and the evaluation should not depend on products from the development activities.

A major lesson in evaluation, learned from Follow Through, stems from the difference between controlled experiments and naturalistic studies in the "assignment" of subjects to treatments. The wrong decisions about the communities to receive treatments, the school teachers and pupils within these communities to participate, and the mechanism by which programs are effected can complicate or seriously jeopardize the quality of an evaluation. There are ways to improve the design of social experiments similar to Follow Through, and thereby strengthen the power of the study, without doing disservice to poor children. Even when no options in the selection of participating communities are available, it should be possible to shape the procedure by which program and district affiliations are determined so that each type of program would be balanced in its project representation according to geographical location, type of community, or other relevant dimensions. Within each project location, it would be possible to establish both experimental and control groups simultaneously rather than leaving the problem of controls to be resolved later. In addition, it might be possible, within a large-scale program, to require that all programs that are to be evaluated be adopted by a certain minimal number of sites or groups and also that all sites wishing to receive grants choose a program from among the several to be evaluated.

There is great value in a stable external panel of advisers to provide continuity and counsel. Such a panel need not be fixed in its membership; panel members can be replaced from time to time to avoid some of the dangers of proprietorship or parochialism. The important consideration is that of an advisory body to help both the sponsoring agency and its contractors recognize and reconcile problems of planning, operations, analyses, interpretation, and reporting. To the extent that such consulting bodies can be influenced to accept accountability for the research products, their utility will be enhanced.

The Follow Through evaluation to date has ignored costs as an evaluation variable to be considered systematically in analyses. The implications of program costs for policy decisions are too great to ignore; any social experiment should incorporate studies of cost/effectiveness and cost/benefit analyses as part of their plan from the outset.

One aspect of project costs that concerns evaluation efforts is the possible need for a quid pro quo account in the budget. Such funds would be drawn upon when the evaluation design requires the cooperation, for control purposes, of groups that do not receive program grants. Risk beyond what is necessary is entertained if one must rely solely on persuasion and diplomacy to win participation from groups that do not receive any project funds.

Critical Dimensions for Evaluation Planning

The alternate positions on dimensions such as those listed in the following paragraphs should be clearly stated and the implications of alternatives for policy-making should be understood in detail before an evaluation design is even attempted. The evaluator must recognize that for any position chosen he either sacrifices at one end of the dimension to realize gains at the other or he must expand the purposes of the study and allocate additional resources to cover separate efforts.

The Service Orientation versus the Research Orientation--For example, a service orientation toward Follow Through would dictate assuring that only the most needy were participants in the program. In contrast, an experimental orientation would either assure equal neediness for participants and nonparticipants or would permit variations on the impoverishment scale so that a "treatment by poverty" interaction might be identified. A service orientation would also argue for a standard presentation of services to all who qualify, whereas an experimental orientation would encourage a greater variety of services. Finally, evaluating a program under a service orientation would require some pre-defined standards against which program success could be measured. In contrast, an experimental orientation would more likely ask whether inter-treatment differences existed, and if so, where, to what degree, and so on.

The Policy Orientation versus the Theory Orientation--For purposes of deciding on continuation or termination a policy-maker might ask, "Does the program work?" A theoretician is more likely to be concerned with the conditions, including treatment variations, under which particular effects are observed. An investigator with a policy orientation would suggest contrasting input levels with output levels without necessarily trying to ascertain what happens during the process. The theorist, while not uninterested in input-output differences, is particularly concerned with the mediating processes. A policy-maker is also more likely to ask cost effectiveness and cost benefit questions about the data, whereas a theorist may, in many cases, ignore the cost variable.

The Formative Orientation versus the Summative Orientation--If one decides that formative assessment is most important, he is by that choice encouraging the program to change as it grows in response to frequent and fairly rapid feedback. Summative assessment, on the other hand, is more congenial to a stable treatment observed over a sufficiently long period to permit conclusions to be drawn about the whole program or the relative strength of fixed alternatives. Formative assessment is most appropriate for those conditions that exist when designing a system is the primary objective, and summative assessment is most appropriate to conditions where the objective is to test the worth of a describable system.

General versus Specific Criteria of Success--The dichotomy between general and specific criteria might be referred to as abstract versus concrete results, or less measurable versus more measurable outcomes, or broad versus narrow criteria, or aggregated and gross outcome measures versus disaggregated measures of individual outcomes. In other words, if one wishes to know whether experimental approaches are effective in reaching their own goals, one chooses different sets of criteria in different time frames than if one wishes to assess all approaches on a single set of effectiveness criteria.

Frequent Reporting versus Deferred Reporting--The question of frequent versus deferred reporting is related to two questions discussed earlier--formative versus summative assessment and policy versus theoretical orientation. If findings are reported frequently, then the risk of premature conclusions is increased. On the other hand, if reports are deferred too long or excessively qualified when issued, their utility for the policy maker may be lost entirely. Perhaps the balance can be struck by acknowledging the legitimacy of each class of report, for different uses. In addition, thoughtful consideration to time constraints must be given very early, if the information provided to decision-makers is to be useful.

Recommendation for Specific Policy Decisions Regarding Compensatory Education Programs

Sponsor Programs

The primary focus of this evaluation of Follow Through is the assessment of the effectiveness of the sponsored programs. The most general finding is that, on the measures obtained over the mere two years of the evaluation (mostly with kindergartners and first graders), there is not yet evidence that one or several sponsors' programs stand out as consistently superior to the comparison program. Arguments have been advanced that the expectation of finding such a result at this time is probably premature and overly optimistic because of the amount of uncontrolled variation, difficulties in implementation, and problems in obtaining adequate comparison groups.

To speculate about eventual outcomes, let us imagine for a moment that the planned evaluation is complete and that a good match was achieved in several projects for each sponsored program. On the basis of present trends, the most reasonable guess is that, for example, outcomes for third-grade, Cohort III participants would still reveal that no sponsor was effective in all projects. Sponsors with highly academically structured classrooms would more often reveal superiority on tests of achievement, but it is likely that in some projects, the NFT classrooms would equal or exceed the FT classrooms on mean achievement. Child-centered classes with more self-regulatory activities might prove superior to their comparison groups on some measures of problem-solving ability and locus of control, but their performance on overall achievement tests such as the WRAT would probably vary considerably. We would probably also find some reversals such that NFT groups exceeded FT groups, even in those areas where the models were well implemented.

Even if such projected results occur in a final evaluation, one could still probably identify some sponsored programs that produced substantial impacts on relevant variables across more than two sites. What decision would then be justified? Some policy makers assume that if such successful approaches could be identified, the finding would provide a direct guide to action. But finding that a sponsor, a community, and a school district can work together effectively is not the same as discovering the precise conditions that enabled their joint success. True, a sponsor who has been associated with several sites producing good results is likely to be doing something right. But without a more comprehensive catalog of the variables included in the treatment, and the identification of these variables in action across sites, no one could say what was right. So prescriptions for compensatory education programs other than Follow Through itself are difficult to derive.

If the following expectations are held by policy makers, they should be discarded as unrealistic:

- The sponsor has a "package"--a clearly delineated set of training manuals, administrative procedures, curriculum materials, and accountability mechanisms--which can simply be applied again to another school district to bring the same results.
- The sponsor has identified the crucial variables of his model and can share all the essentials with others, and thus, the "package" can be applied by people other than the sponsor himself.
- It is the sponsor and his model that contain the key variables determining success and failure. Furthermore, we already know certain factors to be unimportant.

By laying stress on the model and its transferability these viewpoints ignore the possibliity that, for example, the nature of the Federal-local funding relationship and the nature of the school district-sponsor courtship are potent determiners of success or failure. Effects of societal events surrounding the schools (growth of Chicano, Indian, and Black pride; teacher underemployment; teacher unions, school finance inequality controversies) are also not yet adequately considered as crucial factors.

For those sponsored programs that repeatedly fail to produce evidence of impacts across sites, we must explore the reasons for these failures. We should establish, to the extent possible within evaluations like Follow Through, what contributions are required from teachers, parents, and school administrators, what amounts and types of federal-state-local interactions are necessary, and how much funding it takes to achieve the desired outcomes.

What of other compensatory education programs, those that are currently being planned by federal or state education agencies? Have we provided any guidance at this interim stage? At this point, several of the FT projects might be looked on as successful demonstrations. Since it is not clear which are the crucial and which the superfluous factors, however, the new program could only attempt to incorporate as many aspects of the "successful" projects as can be identified. These common elements might include the same sponsor (or some similar third-party change agent), who had been: a) successful with a similar population, b) invited by school district officials in consultation with parents, c) accountable to the funding agency as well as to the local district, d) funded at the same overall level, and e) provided with the necessary and sufficiently committed support staff. If these conditions cannot be established, no prescription of the treatment seems justified.

The Overall Evaluation

While no direct process comparisons were made between FT and NFT classrooms, project by project, we have determined that, on the average, sponsored classrooms differ from comparison classrooms on several process dimensions. Parent and teacher data, and community studies as well, give us strong reason to believe that something potentially powerful is happening. On the question of overall impact of Follow Through, however, we have as yet only a little positive evidence that the effects are cumulative. Although a "go/no-go" decision on the FT experiment is not known to be pending, the evidence so far would favor continuation of the project, even though the current lack of comparability of experimental and control groups and the lack of treatment specification argue for substantial changes in the evaluation design.

Project Level Factors

Any action taken on the basis of present evidence to extend, modify, or terminate projects on the basis of interim outcomes (aside from improving matches with the comparison groups) could have a dramatic effect on the outcome of the overall program and, thus, on its future evaluation. We have assumed that the internal (e.g., curriculum, personnel) components were key treatment variables, but factors such as the locus of decision-making power in a project may be even more influential. It seems clear from the evidence in the Community Studies report (SRI, 1972b, Appendix E) and observation of parent groups in action that parents are quite sensitive to the possibility of arbitrary decision-making. Changes in unwritten social contracts without parents' participation may violently shift parents' roles in Follow Through. The change in parents' attitudes that would occur if projects were dropped on the basis of an evaluation they do not consider valid might radically affect the impact of the program in the sites remaining.

Annex A

ISSUES IN THE ANALYSIS OF THE DATA

Annex A

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This annex presents data and discussions on two fundamental analysis issues:

- The unit for analysis
- The method of analysis.

Part 1 discusses the use of classroom data as a basis for analysis of program effects. Part 2 discusses issues in the selection of ANCOVA as the method of analysis. We have attempted to present these issues and arguments in a manner that does not require advanced knowledge or experience on the part of the reader for appreciation or understanding.

Part 1: The Use of Classroom-Level Data as a Basis for Analysis of Program Effects

The unit of analysis chosen for estimating interim program effects was the classroom. For our current evaluation purposes, the classroom is the most appropriate unit because of the locus of treatment, the nested design and confounding of different levels of nesting, the levels of measurement, and the problems of missing data and program attrition. Where appropriate and practical, we discuss below the advantages and difficulties associated with alternative procedures for dealing with these problems.

Locus of Treatment

The locus of treatment in Follow Through is the classroom. Although the program is targeted for poor children, it is implemented and administered on the classroom level (or some equivalent administrative grouping). We recognize that teachers and aides respond differentially to pupil needs and characteristics, and thus, the "treatment" may be quite different from one pupil to another. But since we have no systematic or reliable way of defining or classifying such treatment variations, we must assume that they are independently distributed.

The Nested Design and Confounding at Different Levels of Nesting

A very important consideration is the relative independence of differential treatment effects within classrooms compared to those across classrooms. We believe it is reasonable to assume that treatment effects are correlated to a much greater degree within classrooms than across classrooms; that is, what the teacher does with individual pupils or groups of pupils in a given classroom will have some impact on all pupils in that classroom but will not necessarily be expected to have any impact on pupils in different classrooms. This means we cannot legitimately pool pupils across classrooms without first estimating (and partitioning) this classroom effect. This problem can be dealt with in at least three different ways:

- By organizing the data into a hierarchical design with classrooms, and perhaps schools, as design variables.
- By considering each classroom as a separate treatment and pupils as units in a one-way design.
- By assuming within-classroom error variance as normally and independently distributed (NID), and aggregating pupil data to the classroom level, so that each classroom represents an independent estimate of program effect.

Each of the above three alternatives presents advantages and disadvantages. The first, hierarchical design, allows for separate estimation and partitioning of effects at each level of nesting. Statistically, it can be considered the most appropriate. However, this model requires balanced frequencies at each successive level, which our data do not satisfy. Moreover, unweighted means solutions (Winer, 1962, Searle, 1971) are appropriate for dealing with only slight imbalances, whereas in our case the problem is acute. Thus, we concluded that this alternative (hierarchical design, unweighted means solution) offered no real advantages over simple aggregation to the classroom level (which is a special case of unweighted means).

The second alternative, considering the classroom as the experiment with pupils as the units, was rejected as inconsistent with the evaluation design and objectives. Follow Through is designed as both a school and community level program. The fact that the educational component is implemented at the classroom level is incidental to the program; it is more a function of the administrative structure of elementary education. Moreover, the concept of planned variation requires that we assume (or test for) some regularity in treatment properties from classroom to classroom within projects.

The third alternative, aggregating pupil level data to the classroom level under the assumption of uncorrelated and normally distributed "errors," has its own advantages and disadvantages. The most obvious disadvantages are intuitive and interpretive. On the intuitive level, such a procedure appears to shift evaluation focus from the individual child to the classroom, and to reduce statistical power and precision by decreasing observations (there are certainly more children than classrooms).

The first of these concerns can be met with the observation that Follow Through was not designed as a clinical program whose success would be based on case studies. Instead, FT is designed to assist poor or disadvantaged children to attain basic skills and attitudes necessary for subsequent academic and social growth, and we are evaluating the program in terms of these children (and their parents and teachers) as a group. Moreover, our measures of outcomes, such as standardized achievement tests, are primarily appropriate for group-level decisions. We admit that evaluation based on criteria of individual successes would be more desirable, and we anxiously await the development of such methodology for large-scale research.

The second disadvantage, reduction of statistical power and precision due to reduced observations, is relevant to the extent that we have relatively few classrooms with which to start. The reduction in observations associated with the aggregation of pupil measures to classroom levels is somewhat offset by the corresponding reduction in variance presumed to exist at the classroom level, which, in the pupil level analysis, would appear as error variance. Also, classroom level variables enable precise estimation of fallible data for use as covariables. (Under the assumptions of classical reliability theory, the point estimate confidence intervals reduce as the $\sqrt{N}$ or the class size. Hence, classroom-level data are more appropriate for covariance adjustments.) In other words, assuming substantial variance can be attributed to classroom differences (over and above program effects), the net effect of the two approaches (classroom analysis and pupil analysis) should yield equivalent statistical power and precision provided sufficient classrooms are available for estimation of variance components.

The same reasoning that leads to the aggregation of measures from pupils to classrooms applies equally to all higher levels at which we suspect that effects other than those due to treatment may exist. For example, we could continue the aggregation of scores from pupils within classrooms on up to classrooms within schools, and finally, to schools within projects. However, each such aggregation carries with it all preceding assumptions and the corresponding additional assumptions at the level involved. Moreover, the effects of such higher level aggregation on power and precision become so dramatic that a random effects model is required for aggregation beyond the classroom.* But since district and project nearly perfectly covary, the only advantage that such higher aggregation would offer is that of removing school variance from treatment variance. And since we believe schools within projects or districts are reasonably well matched, we prefer to assume school variance is dominated by classroom/teacher variance. Hence, the classroom appears to be the most appropriate analysis unit.

Variations in Levels of Measurement

In the previous sections on instrumentation and variable definition, we presented categories of measures obtained at child, parent, teacher, and community levels. Aggregation to classroom-level representation adjusts child and parent variables to the same level as teacher variables. This result is important for purposes of comparability of analysis and interpretation of results, and it enables integration of variables across categories for control purposes. We are still unable to integrate community-level measures with the pupil/parent/teacher, but in project by project analyses, these variables remain fixed and, thus, are not of concern.

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*A random effects model requires that we assume units were drawn at random from a larger population about which we wish to generalize and draw conclusions. A case can be made for employing random effects analyses with projects as the unit if we wish only to test national-level hypotheses concerning FT as a single treatment (i.e., FT versus NFT overall).

Problems of Program Attrition and Incomplete and Missing Data

One of the most difficult--often disastrous--problems occurring in large-scale research programs is that of data loss. Our experience in Follow Through, where a large number of measures are repeatedly gathered for large groups of respondents, is no exception. The fact is that every data point lost because of incomplete measurement or subject mortality (attrition) actually alters the basic research design (i.e., changes the experiment in essentially unpredictable ways). If we were to restrict our interim analysis to those cases for which all data on all measures are present and presumed valid, we would most certainly be faced with a greatly reduced and most likely nonrepresentative subset of cases in terms of our original samples.

To the extent that missing or incomplete data are random events--both within and across measures--our procedure of aggregation to classroom level data represents a partial solution to this problem. Likewise, if program attrition is randomly distributed across subgroups (FT/NFT) within projects, aggregation to classrooms will tend to reduce the apparent impact of this attrition; i.e., even though some or most pupil data within a classroom are lost to attrition, under the assumption that the attrition is random, an unbiased mean can still be estimated for the classroom from the remaining pupil data.

Still another aspect of concern in aggregating data within classrooms is the general migration patterns of pupils from year to year across classrooms and teachers. For the interim analysis, this becomes an issue only for Cohort I data, in which pupils are in their second experience year in Follow Through. Moreover, the problem is considered more crucial for the NFT classes, where redistribution of pupils across classes from year to year is likely to be more pronounced than in FT schools, where pupils tend to progress in relatively intact classroom groupings.

Each of these data aspects received considerable attention in the preparation of data for analysis. The procedures used for handling missing data and for examining effects of classroom migration and attrition are presented below. However, since attrition and associated effects are currently being examined in depth in a separate study, only preliminary consideration will be given in this report.

Of the general methods for handling missing data problems (disregarding it, statistically adjusting for it, and supplying it) we chose direct imputation as the most expedient method for this interim evaluation. A systematic step-by-step procedure was followed in constructing the data matrices, beginning with the construction of pupil-, parent-, and teacher-level variables. Specifically, pupil-level data were restricted to those cases for which baseline data were present (roster and test battery) and for which WRAT and Affect posttests were administered. Data for these cases were combined into appropriate dependent and control variables according to the definitions described earlier (see Definition and Development of Variables). Variables were computed only for those cases where 90 percent or more of the component data (e.g., item scores) were present. All data were then aggregated on a variable-by-variable basis to the classroom level (with the exception of the teacher variables, which already existed at the classroom level), where classroom was defined in terms of the Spring 1971 Rosters.*

The next step was to examine the relative completeness of the classroom-level data. Two aspects of this examination were:

- Assessment of the relative comparability of classroom-level scores obtained for the identic subset (those members of a given classroom for which both pretest and posttest data were "complete") and the total classroom average.
- Assessment of the proportions of missing data on a variable-by-variable basis across classrooms.

The results of the part-whole comparisons for classroom-level values of the pupil outcome variables are summarized in Table A-1. These results indicate the magnitude (in items) and significance level of the average differences between the classroom means of those pupils having both pretest and posttest data and the means of all pupils in the classroom. These comparisons reveal that, for the baseline data (pretests),

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*Note that in terms of baseline data, classroom grouping is wholly artificial, since these measure are gathered prior, or close to, the commencement of formal instruction and treatment administration. However, classroom grouping for the second experience year of Cohort I (Spring 1971) does ignore the grouping for their first experience year (Spring 1970), which may involve carry-over consequences.

Table A-1

CLASSROOM MEANS OBTAINED FOR PRE-POST IDENTIC SUBGROUPS VERSUS TOTAL CLASSROOM POPULATIONS ON BASELINE AND OUTCOME MEASURES

GROUP	VARIABLE	WRAT	QUANT	PROC	READ	LANG	AFFECT
COHORT I-K	PRE $\Delta \bar{x}$	-.05*	-.02	-.02	-.08	-.01	-.03
(N = 337)	t	-.42	-.30	-1.31	-.63	-.36	-1.09
	POST $\Delta \bar{x}$	-1.07	-.66	-.06	-1.09	-.57	-.08
	t	-4.95†	-4.45†	-2.51‡	-5.30†	-4.62†	-2.05‡
COHORT I-EF	PRE $\Delta \bar{x}$	-.05	-.03	NA	-.01	-.02	.02
(N = 118)	t	-.86	-.99	NA	-.24	-1.02	1.57
	POST $\Delta \bar{x}$	-.30	-.21	NA	-.61	-.16	-.07
	t	-1.26	-.95	NA	-1.26	-.97	-1.38
COHORT II-K	PRE $\Delta \bar{x}$	.26	.05	-.03	-.01	-.30	.11
(N = 93)	t	1.29	.38	-.39	-.02	-1.83	.29
	POST $\Delta \bar{x}$	-.04	-.20	-.13	-.55	-.31	-.58
	t	-1.25	-4.47†	-4.80†	-3.80†	-4.08†	-3.94†
COHORT II-EF	PRE $\Delta \bar{x}$	.14	.27	.13	.91	.55	.66
(N = 34)	t	.84	1.57	.76	.59	.71	.61
	POST $\Delta \bar{x}$	-.01	-.42	-.05	-.41	-.28	-.49
	t	-.22	-4.96†	-1.58	-3.21†	-2.66‡	-3.78†

NA = not applicable.

[*] Entries represent the mean difference of total minus identic scores. Thus, a minus sign indicates the identic means are greater than the total class means.

[†] $p < .01$.

[‡] $p < .05$.

means computed from identic and total classroom samples are not significantly different. This is important because it establishes to some extent the lack of a systematic bias in the nonattrited pupil sample in terms of baseline or incoming characteristics.

The posttest comparisons of identic and total class means indicate that identic pupils score higher than nonidentic pupils. One interpretation of this phenomenon is that the slowest pupils are most likely to be subject to attrition and/or pupils transferring into the program are academically behind the continuing (identic) pupils. However, since these posttest patterns were equivalent in FT and NFT classes, and since they were systematic across projects, a more likely interpretation is that identic pupils display a test-retest effect of approximately one item--on the average--over those pupils who migrate into the evaluation sample after pretesting. The results, we feel, provide at least indirect evidence that use of identic pupil scores to estimate the classroom means does not produce subgroup bias (with the exception of the overall retest increment, which appears constant across all subgroups). This is particularly important, since control variable data exist only for the identic pupils.

The second issue, the magnitude of missing data, was evaluated by tabulating the aggregated classroom values on variable-by-variable bases. This amounted to distributing classroom scores on pupil, parent, and teacher variables, both outcome and control. Note that aggregation of parent variables was determined by and tied to the corresponding aggregation of pupil variables. These relative proportions of missing classroom level data are summarized for control and outcome variables in Table A-2.

Table A-2

PERCENT OF MISSING DATA FOR EACH CLASS OF VARIABLES
FOR EACH OF THE ANALYSIS GROUPINGS

	PUPIL		PARENT		TEACHER	
VARIABLE	OUTCOME	CONTROL	OUTCOME	CONTROL	OUTCOME	CONTROL
COHORT I-K	1.57 (N = 356)	1.60	1.50 (N = 329)	4.80	22.51 (N = 253)	22.20
COHORT I-E	2.40 (N = 128)	.74	.91 (N = 109)	7.40	2.74 (N = 74)	1.58
COHORT II-K	7.79 (N = 77)	7.79	0 (N = 72)	5.56	0 (N = 32)	1.34
COHORT II-E	16.13 (N = 31)	11.78	0 (N = 24)	4.17	0 (N = 27)	1.06

As can be seen from Table A-2, the relative extent of missing or incomplete data was not severe, except for Cohort I-K teacher variables. Since we felt this overall result was acceptable for the purposes of our interim analysis, we proceeded to impute missing classroom-level values according to the following algorithm:

- Data missing at the classroom level was imputed from the mean of the school at the appropriate subgroup classification (i.e., grade level by cohort by treatment condition).
- If imputation within the school was unsuccessful, the next level of nesting--the district--was used to impute the missing values.
- If imputation failed at the district level, then the overall subgroup mean was used to supply missing data values.

It should be noted that only rarely was it necessary to proceed beyond the school level, and almost never beyond the district level, in the imputation procedure. As such, we feel the likely bias (most probably reduced variance and increase in Type I error rates) introduced by this procedure is small relative to its advantages of maintaining sufficient cases so that analyses could be performed.

Part 2: Issues in the Selection of ANCOVA as the Method of Analysis

The selection of one-way analysis of covariance as the principal statistical method for evaluating interim FT impacts was based on considerations of logical appropriateness, robustness, and power and interpretability. Each of these considerations is discussed in detail in the following sections. Arguments for the parallel analysis of project and sponsor treatment groupings are also discussed. Finally, considerations of alternative methods of analyses and of alternative techniques of covariable adjustments are presented. Where possible, relevant data are provided to support our arguments.

Logical Appropriateness

In terms of logical appropriateness, the principal issues were the structure of the treatment variables, the use of control groups, and the definition of replication samples. To consider variations of FT treatment on any other than a one-way continuum would require not only the specification of the additional continuums but also rather precise quantification of treatment variables on each such continuum. The objective of such quantification would presumably be to establish a basis for organizing treatments into a factorial or partially crossed structure for analysis of main effects and interactions among "planned variations." However, we now have only qualitative distinctions, corresponding to sponsor descriptions of their respective models, and no assurance that variability in treatment is any less across projects within a given sponsor than across projects between sponsors. Thus, although it is more convenient for purposes of interpretation to group projects within sponsors and, perhaps, to cluster sponsors in terms of meta-models or theoretical constructs (e.g., psychological growth versus parent involvement approaches), we feel it is more defensible on both rational and statistical bases to consider each project as a relatively independent treatment in a large pseudo- (or quasi-) experiment, and to organize the collection of these treatments into a one-way analysis of variance design.

The purpose of within-project control groups was to provide a basis for separating district variance (variability in scores observed from one district to another) from program variance (variability in scores attributable to FT programs). The issue of how to handle these control groups within the one-way analysis design was resolved by treating them as nested within each project. We rejected the alternative of representing the FT/NFT distinction as crossed with treatments, since such a treatment by levels (FT/NFT) analysis design requires that we be able to estimate treatment effects at the NFT level, which of course cannot be done. Also, when crossed analyses of variance design are unbalanced with respect to cell frequencies (as is the case with FT data), resultant hypotheses tests are biased in potentially complex ways, making interpretation very difficult. We reasoned that through use of planned comparisons (i.e., linear contrasts of elements in the one-way design), tests of all major hypotheses of interest could be accomplished while problems associated with the crossed design were avoided.

A second issue concerning the use of control groups in the analysis of covariance design pertains to the equivalance or comparability of subgroups (FT/NFT) within projects on relevant covariables (baseline and background variables). Substantial noncomparability can present serious and perhaps unresolvable analysis problems. Inspection of these covariables in preliminary descriptive analyses did reveal moderate and occasionally substantial lack of FT/NFT covariable comparability within projects. (These covariable values are summarized in project data tables in the section on results.) These biases are viewed as a direct consequence of the lack of randomization in sampling and assignment to experimental groups in the quasi-experimental evaluation design. A variety of methods for dealing with this control group problem has recently been suggested, including the analysis of pre-post difference scores, regressed gain scores, repeated measures, indirect standardization, treatment-effect correlation, and analysis of covariance (Campbell, 1971; Campbell and Erlebacher, 1970; Harris, 1967; Hsia, 1971; O'Connor, 1972; Porter, 1972; Wiley (in press); Whitla, 1968). We rejected the gain score methods because of noncomparability of pre- to post-measures (tests change from kindergarten to second grade) and treatment-effect correlation methods because of insufficient project data points. And since indirect standardization [comparing groups on the basis of residual outcomes derived from multiple regression of the entire sample's outcome scores with relevant control variables (see Shaycoft et al., 1972)] is a special case of classical analysis of covariance, the latter appeared more direct and appropriate for our analysis purposes.

To proceed with analysis of covariance, the following assumptions are required:

1. The samples were drawn from a common population.
2. The subgroups (FT/NFT) are experimentally independent.
3. Experimental "errors" are independently (and less importantly, normally and homogeneously) distributed.
4. Covariables are uncorrelated with treatment, measured without error, and homogeneously distributed.

The descriptive analyses provided some support for Assumption 1; specifically, FT and NFT samples were predominantly composed of below-average families in terms of generally accepted SES indicators (e.g., income, education, occupation), and thus, all appeared to be drawn from the disadvantaged population. Also, since FT and NFT pupils are generally in separate schools, Assumption 2 seems plausible.

Assumption 3 is fundamental to the fixed effects ANCOVA model. Invalidation of this assumption would seriously affect the validity of the analysis, particularly the hypothesis tests. However, Glass et al. (1972) have shown that nonindependence of errors produces far more serious consequences than does nonnormality of errors.

In the Follow Through experiment, pupils are generally grouped into self-contained classrooms. Since each such classroom represents a homogeneous unit (common teacher, location, facilities, and interactions among components) possible nonrandomness of error among pupils within classrooms can be argued. However, classrooms can be viewed as experimentally independent, and we believe they constitute an appropriate unit for analysis in terms of Assumption 3. Additional considerations for the use of classroom-level data in our analysis of effects are discussed in the preceding section.

Relevant to Assumption 4 is the observation that often the FT sample within a project appears somewhat "more disadvantaged" than its corresponding NFT sample. This may indicate the existence of a biased selection or assignment process; e.g., the poorest families are recruited for FT programs, or only the poorest schools (ad hoc) are awarded FT grants. However, this bias becomes troublesome only if we postulate anticipated interactions among these and other control variables that will affect the program, thus violating Assumption 4. For example, children from extremely impoverished families may have suffered organic damage from extended malnutrition and consequently would not be expected to show any improvement, whereas children from moderately impoverished families might be very responsive to the same program. If the poorest families were disproportionately allocated to FT, the above described interaction would strongly affect results of FT/NFT comparisons. More subtle examples of these disruptive interactions occur with respect to measurement instruments in the form of floor and ceiling effects.

Two general methods of dealing with this post hoc nonrandom covariable interaction problem are polynomial regression and blocking. In polynomial regression, the exact nature of the suspected interaction is modeled and statistically controlled by means of polynomials of appropriate degrees. This requires farily elaborate and precise theories and a total absence of error in the covariates.* Although this approach is currently popular in econometrics, it far exceeds the current precision and robustness of theories and measures in educational evaluation. The second alternative--blocking--is generally more appropriate, we believe, to our current state of evaluation technology. But this method imposes the same requirements as the factorial design in terms of balanced cell frequencies. Furthermore, it assumes blocks were defined and units were randomly assigned across conditions within blocks prior to the administration of the treatment. Since the FT data satisfy none of these conditions, we rejected this method. Due to regional and sampling variability, there are virtually no control variables for which blocking strata of critical or theoretical interest could be established to achieve a balanced design. Even if such strata could be established, they would be post hoc, which would seriously affect probability statements on any hypothesis tests. Consequently, we implemented standard classical analysis of covariance to reduce experimental error.

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*The absence of error assumption is required for literally any adjustment on control variables.

To safeguard our analyses from obvious violation of Assumption 4, we performed a series of preliminary screening analyses on potential covariables by examining overall covariable-dependent variable correlation matrices and by examining individual bivariate scatter plots of covariables with treatment and dependent variables. The purpose of this procedure was to ensure that covariables were both uncorrelated with treatment (FT/NFT) and were reasonably and linearly correlated with outcomes. Although this procedure does not ensure within-subgroup homogeneity of covariables (as we shall demonstrate later), the within-cell frequencies were too small to enable a test of this assumption. But Glass et al. (1972) reported, "...the empirical sampling distribution of the F-statistics differed little from the theoretical sampling distribution unless the departure from homogeneous slopes was extreme" (p. 277). Thus, the procedure does provide at least limited protection against these violations of the model (covariable interactions and correlations with treatment variables).

The remaining logical issue in the choice of analysis procedures was the definition of replication samples. We rejected a single analysis pooled over all data because of known and assumed systematic inequalities on both dependent and independent variables among the subsamples. For example, the EF samples were systematically one year older than the corresponding K samples within cohorts. This meant the subgroups were noncomparable in terms of both underlying developmental/maturational variables and test battery content. Similarly, we rejected pooling across cohorts within age levels, since both treatment and test variables underwent considerable transformation from one year to the next. Consequently, we reasoned that the most appropriate analysis would be one that is performed separately on each of four independent replication samples: CI-K, CI-EF, CII-K, CII-EF.

Within these replication samples, several additional analysis alternatives were considered. One was that of conducting separate ANCOVAS on project-by-project bases. Another was conducting repeated-measures ANCOVAS on Cohort I first and second year data. Both of these alternatives were rejected for reasons described below. Project-by-project analyses were considered because sponsors are not well distributed across school districts--or, for that matter, across geographic regions. Indeed, nearly a one-to-one correspondence exists between project and district, and, with few exceptions, district variations are almost totally nested within sponsors. Since there was sample evidence of a strong district variance component, the danger of serious confounding of district and sponsor sources of variance exists. Although within-district control groups (the FT/NFT dimension) provide a basis of separating these sources of variance, performing separate analyses on a project-by-project basis within each replication sample would be even better. The problem with this method is that when classroom-level variables are used as analysis units, we simply do not have enough observations to perform control variable adjustments and to estimate effects for separate project-by-project analyses. Just as there are insufficient degrees of freedom to test the covariance matrices at the project level for assumptions of the ANCOVA model, there also are too few degrees of freedom to perform separate ANCOVAS (or even ANOVAS) on a project-by-project basis. On the other hand, combining projects within cohorts and grade streams into separate analyses does develop sufficient observations or degrees of freedom for hypothesis tests. Use of project descriptor variables as covariates for the interproject variance component enables unbiased estimation of FT/NFT effects, which, through use of planned comparisons, can be tested on a project-by-project basis. In summary, if one is willing to assume that the project descriptors appropriately index the interproject variance component, then the larger (cohort-level) analyses on a set of independent projects should yield comparable results to those of separate (and unfeasible) project-by-project analyses.

The consideration of repeated-measures analyses across the one and two year outcomes of Cohort I projects was based on concern for even further reduction in error variance through use of correlated properties in these data. However, we rejected this analysis method for the following reasons:

- The one year sample was only a subset of the two year sample.
- Different measures were obtained across the years.
- Classroom compositions were noncomparable from year to year.

As such, separate analyses were performed on the Cohort I one year (Spring 1970) and two year (Spring 1971) data, as well as the Cohort II one year (Spring 1971) data. Since data for separate grade streams (K and EF) were analyzed separately, a total of six separate data matrices were analyzed.

Robustness and Power

Two factors of considerable concern in selecting our analysis method were robustness and power. Robustness is the extent to which the results of our hypothesis tests are affected by departures in our data from assumptions in the statistical model employed. Power is the extent to which our procedures lead to valid rejection of null hypotheses.

Robustness

The three basic assumptions underlying the fixed effects model one-way analysis of variance are:

- Independence of within-cell error components
- Normality of within-cell error components
- Homogeneity, between cells, of within-cell error variances.

For the analysis of covariance (the model used in the present study), the above three assumptions hold plus a fourth:

- Homogeneity, between cells, of within-cell dependent-variable/covariable(s) regression.

Certainly, Assumption 1 is critical for a valid analysis, and the rationale (presented earlier) underlying the choice of the classroom as the unit of statistical analysis is relevant here. Since the individual teacher is likely to be the most potent factor (aside from experimental treatment variation) in studies of the present type, a considerable lack of independence could be expected by treating the pupil as the unit of analysis. One could argue for aggregating to an even larger unit, e.g., the school or even the district. However, as has been noted earlier, serious problems regarding degrees of freedom could be expected and it is debatable whether the decrease in potential nonindependence would make the effort worthwhile.

The effects of violations of Assumption 2 on Type I error rates and power when the n's are equal or unequal are well known (see Glass et al., 1972). Assumptions 3 and 4 have been shown to be relatively unimportant at the practical level (i.e., they can be violated with little effect), as long as the cell n's are equal. Otherwise, the combined effects of heterogeneous n's and σ's are unpredictable and can be substantial. Again, using the analyses of FT versus NFT based on orthogonal contrasts as an example for the present study, the n's were unequal.

Issues of Statistical Power

Power, in its most general context, refers to the overall probability of rejecting false null hypotheses. In this context, the well-known power determinants are overall sample size and number of sources of systematic variation in the experiement. For the latter, techniques such as "blocking" on concomitant variables or covarying these covariables constitute the best known means of increasing power.

At a more specific level, the issue is the exact power (in terms of a probability statement) for a specified alternative hypothesis. For such a computation, two parameters must be estimated either by a priori or by empirical means. The first of these is the magnitude of treatment effect, T_j, for which the researcher feels he must reject H_o. Put another way, the investigator must fix the magnitude of the treatment effects so that if, in fact, effects of this magnitude exist in the population, the experiment has a high probability of detecting this state of affairs. The other parameter for which some estimate must be made is the unsystematic or unspecified (error) variance of the dependent variable in the population, σ_e^2. Consider the case where the treatment effects that were deemed by the investigator to be large enough to require detection are, in fact, present in the population. If the experiment involved n subjects per cell (assuming a one-way layout with J treatment groups), then the test statistic $F = MS_{treatment}/MS_{error}$ is distributed not as a central F variate with (J - 1) and J(n - 1) df, but rather as a displaced or noncentral F with df = (J - 1) and J(n - 1) and the mean displaced approximately by the value $\lambda/(J - 1)$, where λ, the noncentrality parameter is given by

$$\lambda = \frac{n \sum_{j=1}^{J} T_j^2}{\sigma e^2} .$$

At the procedural level, the value ϕ is obtained by

$$\phi = \sqrt{\frac{n \sum_{j=1}^{J} T_j^2}{J\sigma_e^2}} .$$

Although it is generally understood that increasing N, which is equal to

$$\sum_{j=1}^{J} n_j \quad ,$$

can be expected to increase the overall power of an experiment, this fact is--loosely speaking--"truest" if J, the number of treatment groups, remains constant. For example, if we had an experiment with two groups, 10 subjects per group, $\sigma_e^2 = 100$, and $T_j = 4$, ϕ in the above formula, would be 1.26. If $\alpha = .05$, the power of this experiment would be approximately .40. On the other hand, if we redistributed the 20 subjects into four groups, leaving T_j, σ_e^2, and α the same, ϕ would be .89, and the power would be about .25. To leave 10 subjects per cell and have four treatment groups would require doubling the sample size, and if we left the values T_j, σ_e^2, and α as before, we would have $\phi = 1.26$ again, but this time the power would approximately equal to .49.

The preceding example reinforces the idea that power is more than simply a function of N. Needless to say, the investigator is wise to divide his total N into as few groups as empirically and intuitively possible.

In the Follow Through study, analyses were often performed on large numbers of classrooms (the sampling unit) and large number of projects (an independent variable). Also, to some extent, the locus of greatest interest involves the individual FT versus NFT comparisons within projects. These comparisons are often based on means having a small number of observations, despite the overall large N in some cases.

For this reason, we consider it important to assess power along with some of the dependent variables. Two complicating factors arose in this power analysis. First, a large number of FT versus NFT comparisons were made on the same dependent variable, whereas what was really desired was an overall assessment of power. Secondly, each comparison was based on different cell n's and also different adjusted (by the covariables) estimates of σ_e^2. Thus, to be able to arrive at an overall--albeit not completely precise--estimate of the power of, for example, the planned contrasts using the Cohort I-K sample and the achievement-dependent variable, pooling of n's (see Cohen, 1969) and σ_e^2's and averaging were employed. More specifically, if we have 2J cells of n_j observations each (J projects for both FT and NFT), and adjusted variance errors of comparisons σ_d^2, we may define

$$\bar{n} = (1/2J) \sum_{j=1}^{2J} n_j \quad ,$$

$$\bar{\sigma}_d^2 = (1/J) \sum_{j=1}^{J} \sigma_d^2 \quad .$$

We can then estimate a common adjusted $\bar{\sigma}_e^2$ term as

$$\bar{\sigma}_e^2 = \bar{\sigma}_d^2 \left(\frac{\bar{n}}{2}\right) \quad .$$

We then employ the statistic Φ, given in this case by

$$\Phi = \sqrt{\frac{\bar{n} \sum_{j=1}^{2} T_j^2}{2\bar{\sigma}_e^2}} \quad .$$

The question of "average power" for the paired (FT versus NFT) comparisons, using one sample and one dependent variable at a time, was addressed by entering the formula with various values of T_j. For each of the samples and dependent variables examined, one computation was made in terms of the average (over the J projects) absolute value of treatment effects obtained between FT and NFT groups. Other computations were made in terms of treatment effects corresponding to .5, .75, and 1.0 adjusted standard deviations of overall dependent-variable scores. The results are displayed in Table A-3.

It is often difficult for the investigator to specify the T_j values in making power computations. One criterion often used is one standard deviation (SD) in the distribution of dependent variables. Note that a T_j of 1 SD for two groups (as is the case in the FT versus NFT comparisons) implies a difference between treatment means of 2 SDs. This difference might be considered too large to constitute a minimum difference to be detected. Thus, the values in Table A-3 for T_j values of .5 SD (and, therefore, a difference between means of 1 SD) may be the best ones upon which to focus. For these values, the average comparison

TABLE A-3

AVERAGE POWER VALUES FOR PLANNED COMPARISONS WITH VARIOUS DEPENDENT VARIABLES

DEPENDENT VARIABLE	AVERAGE TREATMENT EFFECT	.5 SD	.75 SD	1 SD
ACHIEVEMENT				
COHORT I-K				
N = 330, J = 28	.57	.30	.57	.82
COHORT I-EF				
N = 123, J = 11	.20	.24	.40	.69
IF N = 176 (J = 11)	.23	.31	.59	.83
IF N = 220 (J = 11)	.27	.38	.69	.90
COHORT II-K				
N = 51, J = 8	.23	.10	.17	.28
IF N = 160 (J = 8)	.58	.25	.48	.72
COHORT II-EF				
N = 31, J = 4	.28	<.10	.10	.15
IF N = 120 (J = 4)	.86	.17	.29	.48
AFFECT				
COHORT I-EF				
N = 123, J = 11	.20	.24	.40	.69
IF N = 220 (J = 11)	.27	.37	.69	.90
COHORT II-EF				
N = 31, J = 4	.34	<.10	.10	.15
IF N = 120 (J = 4)	.93	.17	.29	.47

between FT and NFT means appears to have somewhat lower power than would be considered optimal on both the achievement and affective variables. This fact is particularly true in the case of the Cohort II data--both K and EF. One must remember that the power values are averages, however, and that they are somewhat crude averages at that. The power for a specific within-project comparison--between FT and NFT--on these dependent variables may be greater than the tabled values, although some comparisons will also have lower power.

In general, the effects of increasing overall sample size while leaving the number of treatment groups unchanged resulted in power increases that could perhaps be considered not worth the effort. For example, almost doubling the Cohort I-EF sample to 220 classrooms would increase the average probability of detecting a (real) difference between means of .5 SD from .24 to only .38.

To discover the effects of redistributing the sample classrooms into a smaller number of treatment groups, the 330 Cohort I-K sample classrooms were hypothetically spread over 56 projects by treatment (FT versus NFT) cells. Had there been only 20 such cells (10 projects, as opposed to 28) to which the 330 classrooms were assigned, the power for detecting a .5-SD effect, on the average, would have increased from .30 to .67. For detecting a .75-SD effect, the power would have increased from .57 to .95, and for 1.0 SD, from .82 to, for all intents and purposes, 1.0.

Although only a small number of pupil-dependent variables were employed in the assessment of power, the general findings can be expected to be generalizable to the other variables analyzed. Table A-3 shows that the power values for a given sample on the achievement-dependent variable were almost identical to those on the affective-dependent variable in the cases in which both were examined. This correspondence can be expected to hold throughout the other analyses.

The implications of the preceding discussion are twofold. First, the fact that more significant differences were not found in the FT versus NFT comparisons must be tempered somewhat by the fact that real differences of a magnitude most would consider worth reporting may have, in some cases, gone undetected because of the relatively low power in many of the analyses. Secondly, it would appear that a case could be made--at least from the evaluation point of view--of implementing the "planned variation" concept with fewer "variations" and a more substantial data base for each. This latter notion would appear to be reasonably consonant with the view of Follow Through as an experiment.

Interpretability

The third factor of concern in our selection of the analysis method was the interpretability of results. In this context, our one-way analysis of covariance is considered appropriate for a number of reasons. First, for each replication sample (CI-K, CI-EF, CII-K, CII-EF), the method provides unbiased estimates of treatment effects for each treatment/control combination entered. These effects can be directly interpreted in terms of their absolute or relative magnitudes and further evaluated against an error term yielding probability statements concerning hypotheses tests.

Second, the method enables the development and testing of literally any hypothesis of interest within each replication sample--at a known confidence (alpha) level. Moreover, through use of Bonferroni or Fisher techniques of constructing joint confidence intervals, post hoc hypotheses (comparisons or groupings of interest that may emerge after the data are analyzed) can be tested.

Third, since each analysis produces unbiased estimates of program effects, these effects can be compared across replication samples for the appropriate subgroups. This provides a means for, say, examining first year effects for a given sponsor on Cohort I versus Cohort II data and hence, for evaluating improved implementation. Similarly, second year effects for Cohort I can be contrasted with first year effects for either Cohort I or Cohort II. And with a substantial amount of difficulty, hypothesis tests can be constructed for these interanalysis comparisons.*

To clarify the analysis flexibility afforded by the one-way fixed effects ANCOVA, consider the following example. Cohort I-K pupil data consists of 330 classrooms distributed across 28 projects, for which two-year effects are analyzable.† Since each project contains two treatment groups--FT and NFT--there are a total of 56 cells in the one-way design for this data set; and the overall or omnibus F test for treatment effects is on 55 df. Since we are interested in estimating effects and testing hypotheses concerning FT outcomes, this omnibus test is not of interest. Rather, through use of linear contrasts, 26 separate and orthogonal (mutually exclusive) tests corresponding to FT versus NFT groups within each project are of interest, and each of these tests is based on a single degree of freedom. Other linear contrasts, also with each on 1 df, might be used to simultaneously contrast all projects within sponsors or groups of sponsors. Such contrasts would not, however, be orthogonal to the project-level contrasts. In short, through use of properly constructed contrasts each having the property $\Sigma c_i = 0$, where each c_i is a coefficient (usually ±1,0) by which level of treatment is multiplied, all possible comparisons of interest can be generated and tested at known (or estimated) confidence limits. Since treatment effects estimated by this fixed effects model are assumed unbiased, they can presumably be compared across analyses. This means that the estimated FT effect for a Cohort I project can be directly compared to the estimated FT effect for that (or any other) project in, say, Cohort II. And since these estimates are based on independent samples, the test statistic for such a cross-cohort comparison would be:

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*Such tests would require appropriate combination of estimated effect and error components from the separate analyses, and they would be based on the assumption that these components are independent across analyses.

†For a project to be analyzable, classroom data must be available for at least two FT and two NFT classrooms.

$$\frac{\alpha_1 - \alpha_2}{\sqrt{\dfrac{(N_1 - 1)SE^2_{\alpha_1} + (N_2 - 1)SE^2_{\alpha_2}}{N_1 + N_2 - 2}}}$$

where

α_i = project effects,

SE_i = standard error of project effects,

and N = size of project sample.

This is the familiar t-test for independent samples.

We stated above that the one-way fixed effects ANCOVA enables testing all such outcome comparisons of interest at known (or estimated) confidence limits. In the actual analyses of these interim data, only tests on program effects (FT versus NFT) at the project and sponsor level were performed, and these were orthogonal within each analysis. (The next subsection discusses reasons for performing separate analyses on project- and sponsor-level groupings.) Although strictly speaking, project and sponsor tests are nonorthogonal to each other, they are performed on slightly different data sets and thus are partially independent. This overlap in analysis is of concern only to the extent that it affects the width of the confidence interval that we construct to evaluate significance of results. For example, if we assume that sponsor- and project-level analyses are mutually exclusive, our confidence intervals for orthogonal tests within these analyses will be a function of the alpha value selected for significance testing. If we wish to take into account the nonindependence of the two levels of analysis, this confidence interval will have to be expanded in terms of a presumed joint probability distribution of the form $\alpha_T = 1 - (1 - \alpha)^n$, where n is the number of sponsor and project tests common to the same data subsets.

This issue can perhaps best be clarified by specific example. The Cohort I-K two-year project analysis involves 28 projects (330 classrooms), while the sponsor analysis involves 12 sponsors (356 classrooms). Hence, there are an average of slightly more than two projects per sponsor. Project-level tests are independent, and so are sponsor tests. But, on the average, three tests per sponsor are performed: two at the project level, and one at the sponsor level. To maintain a .95 confidence interval for any test at either level, each individual test should be performed at the (1 - .983) or the .017 level.

On the other hand, we could argue that the project level is the most appropriate and that, on the average, 1-1/2 tests are performed for each project. This suggests that the appropriate confidence interval for each individual test would be at the .965 (α = .035) level. Thus, it appears that the .95 confidence interval for individual tests--both project and sponsor level--will be biased toward Type I errors, so that depending upon how one wishes to interpret the situation, the true alpha will be somewhere between .14 and .07. We believe that such bias is acceptable and possibly desirable in terms of offsetting the Type II bias because of lack of analysis power.

The actual confidence intervals for interpreting the significance of each test are obtained by using the formula

95 Percent Confidence Interval = ± 1.96 X Standard Error of Contrast.*

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[*] This corresponds to the general expression

$$\bar{x} - SE(Z_{1/2\alpha}) \le \mu \le \bar{x} + SE(Z_{1/2\alpha}) \quad .$$

Separate confidence intervals are calculated for each comparison. These confidence intervals are then combined (added and subtracted) to the corresponding estimated treatment effects. They provide a convenient and direct method of evaluating the significance of individual results. One method of reading the confidence intervals is: "We are .95 confident that the true FT effect for (project or sponsor comparison) is at least (lower interval estimate) and as much as (upper interval estimate)." If the confidence interval crosses zero, we conclude nonsignificance.

Arguments for Parallel Analysis at Project and Sponsor Levels of Treatment

We have indicated that separate ANCOVAS were performed on project- and sponsor-level groupings of the data. The decision to conduct such parallel analyses was based on several considerations, including number of observations, assumptions regarding district-level variance, and evaluation objectives. These considerations are discussed in the following paragraphs.

With regard to number of observations, one of the most serious weaknesses of this interim evaluation is the lack of power in statistical tests, primarily due to limited observations. This problem is aggravated when project-level groupings of the data reveal that often only a single control classroom is available for given projects, thus excluding these data from the project-level analyses. But if observations within cohorts are grouped at the sponsor level such that the sponsor defines the treatment variable, then all available and valid data can be included. To reduce the impact of the pooled within-sponsor district variance on estimation of treatment effects, appropriate district-level covariables are obtained from the project descriptors and incorporated in the ANCOVAS. With the exception of Cohort II-E data, these sponsor-level analyses result in fewer treatment groups and more observations, yielding notable increases in degrees of freedom for error variance.

The effect of pooling district variance within a sponsor is likely to obscure, to some extent, estimates of variance due to treatment. We considered statistically correcting the data, but solutions involving least-square adjustments or corrections require that we model the assumed district effects as constant within and across sponsors, which is probably false. This means that hypothesis tests regarding FT/NFT outcomes for sponsor-level analyses will most likely be too conservative. On the other hand, estimates of FT/NFT effects should not be biased by district effect. And sponsor-level tests showing significance should be quite generalizable, provided a reasonable number of projects comprise the test.

Finally, one goal of the evaluation is to identify the programs that produce measurable impacts on a national level. Sponsor analyses include all currently available evidence of such impacts, whereas, as noted above, project-level analyses exclude many observations because of variance estimation problems. Hence, the sponsor analyses can, in a sense, be considered more appropriate to the overall evaluation objectives but less appropriate in terms of detection of significant interim program effects.

Consideration of Alternative Methods of Analysis

In the course of developing our final method of analysis, we explored several alternative methods, each designed to deal with a major difficulty encountered in the interim data. One such alternative addressed the problem of FT/NFT comparability, another dealt with problems of degrees of freedom (limited observations), and a third set of alternatives were considered for techniques of covariable adjustment and bias reduction. Since a detailed presentation of our research into these alternatives is beyond the scope of this report, we will present only a brief discussion of each.

Problems in Control Group Matches

As previously indicated, preliminary inspection of the interim data suggested moderate and occasionally severe noncomparability of treatment and control pupils on many demographic and experiential variables. As might be expected, this noncomparability was most severe at the population extremes; i.e., the FT samples tended to be more disadvantaged than the NFT samples. This problem became particularly acute when, in a preliminary analysis, (SRI, 1972a) we restricted our observations to just those FT and NFT pupils whose families met the OEO poverty guidelines (about 30 percent of the data). This restriction resulted in a disproportionate representation of FT pupils in the sample and occasionally nearly totally excluded the in-district controls. To develop sufficient data for analysis, we reasoned that careful matching on concomitants of district variance on a pupil-to-pupil basis should effectively account for the district effects, thus enabling us to pool control pupils across districts and to implement a post hoc matched-pairs analysis for FT projects on a project-by-project basis. This matching involved arranging all "eligible" (i.e., meeting OEO poverty guidelines) NFT pupils within each cohort on the selected matching variables (preschool experience, ethnicity, sex, parent education, and parent-child interaction score). Then, for each "eligible" FT pupil within the project, a NFT "match" was drawn with respect to these five matching variables. This matching was constructed independently from project to project, with replacements across but not within projects.

This procedure had the advantages of increasing both the power and precision of the analysis (as well as enabling an analysis in the first place) and of providing estimates of FT effects at the child level. The disadvantages of this approach included the use of post hoc matches, the nonindependence of units across projects, and the lack of attention to classroom-level effects. Currently, we feel this method might be useful for detection and analysis of subtle or complex interactions at the child level (i.e., aptitude by treatment interactions) but that the approach is inappropriate for assessment of overall program effect (i.e., it lacks the necessary generalizability for evaluation of a national program).

On the other hand, if national or regional level effects can be established, the next step might well be that of analyzing for differential effects on the individual level. The thrust of such an approach would most likely involve the identification of patterns of results for purposes of individual diagnoses and prescription This implies we could precisely define antecedents, treatments, and consequents at the level of the individual child, a capability that we are currently attempting to develop (but that is not present in these interim data).

For the overall problem of noncomparability of control and treatment groups on the classroom-level bases (i.e., our current analyses), there does not appear to be a convenient solution. However, the impact of the problem is lessened by recalling that our model assumes classroom variance dominates other nontreatment sources of variance within the district. Since the NFT samples do control for district variance, and since reasonable efforts are made to match FT/NFT classrooms, our analysis method should appropriately and validly detect the treatment variance.

Limited Degrees of Freedom

Another difficulty encountered in the current analysis is the limited observations when classroom-level units are used. The direct implications of this problem have been discussed both in terms of assumptions of the covariance model and of effects on the power of the analyses. An alternative analysis procedure, which was thought might produce some savings in degrees of freedom lost to covariables, was explored. This procedure is described as indirect standardization, and it is presented in detail in a recent paper by David Wiley (in press). The following excerpt is particularly relevant:

> In indirect standardization, instead of applying a set of reference proportions to the subgroup means for each group, we calculate the subgroup means for the whole group and then use the subgroup proportions in each comparison group to produce a predicted value for each subgroup. These predicted values are a forecast of the values which would result if there were no differences between the comparison groups except those generated by the unequal performance of the subgroups and the unequal distribution of subgroups in the comparison groups. These values may be used to adjust the original comparison group means by estimating the bias due to the unequal distribution and eliminating it (pages 9-10).

For data sets composed of relatively few observations, this procedure appears to offer the advantage that a large number of concomitants or covariables could be used, via conventional regression techniques, to produce a single composite--or indirectly standardized--control variable. This resultant control variable employs a single degree of freedom in ANCOVA, whereas multiple covariates would correspondingly use multiple degrees of freedom.

Several important analysis issues must be resolved before the indirect standardization approach can be generally adopted. First, the approach subsumes all assumptions of conventional ANCOVA in addition to those involved in the standardization procedure. Second, the approach is more likely to operate on bias than on error variance. This argues in favor of the procedure, since it is bias that is most evident in our descriptive analysis of within-project control groups. Third, it is not intuitively clear that the same probability distribution (i.e., the F distribution) used for hypothesis tests for conventional ANCOVA would be appropriate for indirect standardized ANCOVA tests.

To evaluate empirically the relative consequences of proceeding with conventional ANCOVA, as compared with indirectly standardized ANCOVA, we applied both procedures to a subset of data in this interim analysis. The specific subset was the parent-level outcome analyses, where it is believed that the estimation problems were most variable from project to project and where missing data problems were moderate. The results of these two procedures are summarized in Tables A-4 to A-7. Using conventional ANCOVA as the standard, the results of indirect standardized ANCOVA appear to conform to the above prediction; namely, indirect standardization produces a substantial shift toward FT-favoring results (i.e., it produces greater adjustment for NFT bias), whereas the conventional ANCOVA procedure displays more results as significant. Hence, for these data, conventional ANCOVA appears to optimize on error variance reduction, whereas indirect standardized ANCOVA optimizes on bias reduction.*

Alternate Techniques for Covariable Adjustment and Bias Reduction

Two alternate techniques suggested for covariable adjustment and bias reduction in the analysis of these interim data were:

- Correction of covariable weights for unreliability (Porter, 1967).
- Estimation of FT effects by deviation from subgroup (project or district) means, as opposed to grand (cohort) means.

The basis for the first alternative is well described elsewhere (Porter, 1967, 1972; Glass et al., 1972) and is discussed here only for purposes of completeness. Specifically, under the assumption that many covariable measures represent fallible data, an adjustment in the covariable regression coefficient (i.e., the "beta weights") can be made to reflect the expected value if measurement were error-free. This adjustment is essentially equal to the proportional difference of the reliability of

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*Note that another important distinction is that, for these analyses, ANCOVA is performed on unweighted means, whereas the indirect standardization procedure was based on pupil data that would have produced weighted-means predicted scores; hence, the selective sensitivity to bias.

TABLE A-4

ADJUSTED PARENT OUTCOMES OBTAINED BY MEANS OF ANCOVA VERSUS INDIRECT STANDARDIZATION PROCEDURES: COHORT I, KINDERGARTEN

	PARENT/CHILD INTERACTION		PARENT/SCHOOL INVOLVEMENT		CHILD ACADEMIC EXPECTATIONS		SENSE OF CONTROL	
PROJECT	ANCOVA	IND. STD.	ANCOVA	IND. STD.	ANCOVA	IND. STD.	ANCOVA	IND. STD.
SS(b)	.37	.18	.35	.27	.28	.38	.64	.61
SS(c)	.04	-.02	-.18	-.24	.02	.12	-.36	-.29
SS(d)	.18	-.08	.00	.06	.16	.76	.43	.48
SS(e)	.06	-.12	-.42	-.03	-.34	.13	-.51	-.23
FW(a)	.24	.14	.09	.45	-.53	-.40	-1.12*	-.83*
FW(b)	-.14	-.18	.72*	.70*	.11	-.29	-.04	-.16
FW(c)	.28	-.23	-.09	.15	-.80	-.34	.11	.40
UA(a)	.14	.09	.36	.54	.19	.63	.01	.18
UA(d)	.45	.25	.70*	.72*	.59	.64	-.45	-.40
BC(a)	--	--	--	--	--	--	--	--
BC(b)	-.16	-.23	.66	.52	.18	-.07	.28	.21
BC(c)	.40	.20	.74	.76	-.36	.22	.43	.52
BC(e)	.59*	.31	.33	.70*	-.08	.28	-.28	-.03
UO(a)	-.19	-.32	.30	.39	-.56	.41	.16	.33
UO(b)	.50	.56	.30	.68	-.02	-.00	-.02	.48
UO(c)	-.03	-.04	.16	.36	.42	.84	-.25	.00
UK(a)	.04	-.07	.11	.23	.21	.55	-.26	-.03
UK(b)	.16	-.17	.65	.52	-.45	-.79	.22	.25
UK(c)	.49	-.46	.02	.14	-.13	-.18	.37	.38
HS(c)	-.03	-.01	.05	-.15	-.40	-.47	-.13	-.16
UF(a)	-.12	-.09	.08	.00	.14	.06	.14	.12
UF(c)	.44	.07	.50	.37	-.09	-.51	-.06	-.15
ED(b)	-.21	-.41	-.22	-.32	.20	.02	.20	.13
ED(c)	--	--	--	--	--	--	--	--
NY(a)	-.01	-.18	.17	.45	-.39	-.15	.34	.49*
NY(b)	-.14	-.11	.29	.36	-.33	-.25	.34	.36
SW	.08	-.14	-.32	-.15	-.07	.36	.18	.32
PI	.07	.19	.31	.25	.53	.39	-.61	-.64
OVERALL	.13	-.03	.22	.30	-.06	.09	-.01	.09
DIFFERENCE (COV.-IND. STD.)	.16		-.08		-.15		-.10	

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*<.05.

TABLE A-5

ADJUSTED PARENT OUTCOMES OBTAINED BY MEANS OF ANCOVA VERSUS INDIRECT STANDARDIZATION PROCEDURES: COHORT I, ENTERING FIRST

PROJECT	PARENT/ CHILD INTERACTION		PARENT/ SCHOOL INVOLVEMENT		CHILD ACADEMIC EXPECTATIONS		SENSE OF CONTROL	
	COV.	IND. STD.	COV.	IND. STD.	COV.	IND. STD.	COV.	IND. STD.
SS(a)	.72*	.42	.83*	.97†	.26	.44	.18	-.10
UA(b)	.28	.10	.52	.68*	-.44	.31	-.20	-.00
UA(c)	-.39	-.28	-.07	.47	-.02	.65	.87*	1.28†
BC(d)	.18	.09	-.08	.42	-.93*	-.06	.42	.21
UG	.68	.54	.06	.58	-.58	.16	.29	.52
UO(d)	-.04	.26	-.31	.41	-.34	.72*	-.10	.34
UO(e)	--	--	--	--	--	--	--	--
HS(a)	.78	.33	1.40*	.87*	.81*	.05	.12	.24
HS(b)	.28*	.13	-.35	.31	-.36	.12	-.79*	-.47
UF(b)	-.24	-.27	.76*	.92*	-.11	-.12	-.34	-.11
ED(a)	.29	.23	.81*	.68*	-.22	-.12	.31	.45
OVERALL	.25	.16	.36	.63	-.19	.22	.08	.24
DIFFERENCE (COV.-IND. STD.)	.09		-.27		-.41		-.16	

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* <.05.

† <.001.

TABLE A-6

ADJUSTED PARENT OUTCOMES OBTAINED BY MEANS OF ANCOVA VERSUS INDIRECT STANDARDIZATION PROCEDURES: COHORT II, KINDERGARTEN

	PARENT/ CHILD INTERACTION		PARENT/ SCHOOL INVOLVEMENT		CHILD ACADEMIC EXPECTATIONS		SENSE OF CONTROL	
PROJECT	COV.	IND. STD.	COV.	IND. STD.	COV.	IND. STD.	COV.	IND. STD.
FW(a)	-.18	.06	.64	.33	-.03	.40	-.19	-.11
FW(b)	.79*	.75*	.71	.24	.12	.54	.41	.37
FW(c)	-.05	.21	-.62	-.43	-.54	-.33	.22	.47
BC(c)	.15	.23	.03	-.14	.12	-.35	.27	.21
UO(a)	1.03*	.80	.59	.39	.35	.17	-.53	-.23
UF(a)	.06	.10	.35	.26	.19	.12	.38	.40
ED(b)	--	--	--	--	--	--	--	--
NY(a)	.30	.27	.26	.01	-.29	.06	.36	.38
OVERALL	.30	.35	.28	.09	-.01	.09	.13	.21
DIFFERENCE (COV.-IND. STD.)	-.05		.19		-.10		-.08	

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*<.05.

TABLE A-7

ADJUSTED PARENT OUTCOMES OBTAINED BY MEANS OF ANCOVA VERSUS INDIRECT STANDARDIZATION PROCEDURES: COHORT II, ENTERING FIRST

	PARENT/ CHILD INTERACTION		PARENT/ SCHOOL INVOLVEMENT		CHILD ACADEMIC EXPECTATIONS		SENSE OF CONTROL	
PROJECT	COV.	IND. STD.	COV.	IND. STD.	COV.	IND. STD.	COV.	IND. STD.
UA(c)	.08	-.27	.10	-.00	.14	-.42	-.70	-.39
BC(d)	.31	.10	.46	.50	.05	-.17	.18	-.22
UO(d)	-.19	.06	.27	.11	-.10	.26	1.36	.24
UF(b)	--	--	--	--	--	--	--	--
OVERALL	.07	-.04	.28	.20	.03	-.11	.35	-.19
DIFFERENCE (COV.-IND. STD.)	.11		.08		.14		.54	

the measure and a perfectly reliable measure (i.e., error-free). The net effect of the procedure is an increase in the slope of the betas--i.e., greater covariable adjustment. However, since our data are aggregated to classroom-level variables, reliability estimates of all covariables are such that this correction procedure would have virtually no net effect. All covariables for pupil and parent analyses have estimated reliabilities (where estimable) in excess of .95, and currently, the reliability of teacher covariables is unestimable and thus must be assumed to be error-free.

The second procedure, using district- or project-level subgroup means to deviate cell means for covariable adjustments, does produce different absolute cell values compared with deviation of cell means from grand means. However, our goal is to estimate and to interpret relative FT/NFT differences, and these relative cell estimates are identical for both procedures. Since computer methods exist for conventional (grand mean) adjustments, we chose to follow this procedure.

The actual results of overall regression covariables on the outcome variables are tabulated and summarized in Annex B. These tables are prepared for the project-level analyses and present summary and regression statistics for each major group of analyses.

Annex B

PSYCHOMETRIC AND REGRESSION DATA

Annex B

PSYCHOMETRIC AND REGRESSION DATA

This annex consists of two parts. The first part presents the results of reliability analyses of the pupil outcome measures. The second part contains summary and regression statistics obtained from the separate ANCOVAS performed on the project-level data.

Part 1: Psychometric Data--Item Analyses and Reliability Data for Pupil Outcome Measures

The item analyses and relevant statistical information on the 1971 pupil outcome measures were compiled separately for each cohort group evaluated in this report. Both Follow Through and Non-Follow Through scores were pooled in computing item and test statistics for outcome variables for each cohort by grade streams.

Table B-1 summarizes the principal statistical results of the reliability analyses. Included in the table are mean scores, standard deviations, coefficient alpha reliability estimates, standard errors of measurement, indices of skew and kurtosis, and the number of cases. In all, nearly 14,000 pupils contributed to these data: over 7,500 in Cohort I, Kindergarten (CI-K), 3,200 in Cohort I, Entering First (CI-E), 2,000 in Cohort II, Kindergarten (CII-K), and 1,000 in Cohort II, Entering First (CII-E). Measures included were the WRAT, achievement, and disaggregated component variables. The affect measure was not included in this analysis.

Inspection of Table B-1 reveals that remarkably high reliability estimates are obtained for these measures. In particular, reliability of the achievement measure ranges from a low of .964 to a high of .986. WRAT varies from .934 to .973. The quantitative, reading, and language measures range from .762 to .982, with a median value of .92. The cognitive processes measure, which was omitted from the CI-E battery, displayed the poorest measurement properties, with reliability varying from .580 to .760.

TABLE B-1

TEST STATISTICS AND RELIABILITY DATA FOR DEPENDENT VARIABLES AND COMPONENTS IN THE FOLLOW THROUGH COGNITIVE TEST BATTERY

	Sample Base			
	CI-K	CI-EF	CII-K	CII-EF
ACHIEVEMENT				
MEAN	119.9	141.0	100.8	145.7
S.D.	32.07	46.02	25.00	29.09
RELIAB.	.972	.986	.964	.969
STD ERROR	7.53	7.67	6.65	7.19
SKEWNESS	-.215	-.514	-.551	-.742
KURTOSIS	-.367	-.679	-.241	.867
N	7427	3237	1937	778
WRAT				
MEAN	69.2	110.7	44.8	63.7
S.D.	16.05	18.73	13.59	15.04
RELIAB.	.955	.973	.934	.952
STD ERROR	4.76	4.32	4.85	4.60
SKEWNESS	-.059	-.803	-.137	-.096
KURTOSIS	-.288	-.161	-.155	-.209
N	7567	3237	1994	793
QUANTITATIVE				
MEAN	38.5	39.2	27.7	44.3
S.D.	10.49	12.78	7.67	8.85
RELIAB.	.928	.951	.880	.907
STD ERROR	3.91	3.93	3.64	3.72
SKEWNESS	-.558	-.803	-.672	-.926
KURTOSIS	-.261	-.161	.068	1.028
N	7427	3237	1941	778

TABLE B-1 (CONCLUDED)

	Sample Base			
	CI-K	CI-EF	CII-K	CII-EF
READING				
MEAN	52.7	78.2	51.2	69.3
S.D.	14.98	28.40	13.97	14.37
RELIAB.	.948	.982	.950	.948
STD ERROR	4.76	5.36	4.36	4.57
SKEWNESS	-.135	-.471	-.580	-.797
KURTOSIS	-.257	-.934	-.334	1.157
N	7427	3237	1956	782
LANGUAGE				
MEAN	21.7	23.6	14.6	22.6
S.D.	8.21	8.19	3.55	6.33
RELIAB.	.888	.916	.762	.851
STD ERROR	3.78	3.28	2.30	3.32
SKEWNESS	.125	-.167	-.460	-.071
KURTOSIS	-.505	-.533	.638	-.262
N	7427	3243	1982	778
COG. PROCESSES				
MEAN	7.0		7.0	9.4
S.D.	1.72		2.67	2.33
RELIAB.	.580		.760	.724
STD ERROR	1.40		1.73	1.61
SKEWNESS	-.703		-.485	-1.153
KURTOSIS	.227		-.550	1.103
N	7463		2008	778

Table B-2 presents the detailed results of the item analysis for the contents of the 1971 Follow Through Pupil Test Battery. These results display the item difficulty (percent passed) and variance for the test samples on each of the items contained in the battery. Items are arranged in terms of the major achievement components (i.e., quantitative, reading, language, and cognitive processes), and thus, this table serves to define operationally the variables, as well as to display item statistics; also included is the booklet source of the item. Since not all items were given to all pupils, the patter of administration is also noted in this table.

Of particular interest are the apparent scalogram properties in terms of item difficulties as noted in this table. For example, increasing difficulties can be noted to correspond to item sequences and to grade levels (or cohorts) for the arithmetic, reading, and spelling sections of the WRAT. These item properties correspond well to those described by the authors (Jastak and Jastak, 1965) and indicate this test has desirable measurement properties. With few exceptions, other groups of items produced very uniform high or low difficulty indices, suggesting the test might profitably be shortened in these areas. The notable exceptions are for the MAT and SAT items in language and reading. Also, the letter discrimination items did not generally differentiate performance, which suggests questionable utility.

In sum, the data presented in this table are considered particularly useful for subsequent planning and test selection. Also, although the overall reliability is quite high, there does not appear to be any striking evidence that this is because of items other than those in the WRAT.

TABLE B-5

ITEM ANALYSES (DIFFICULTY AND VARIANCE) FOR CONTENTS OF THE 1971 FOLLOW THROUGH PUPIL TEST BATTERY: COGNITIVE VARIABLES

VARIABLE/ITEM	SOURCE	CI, K, MAY		CI-KF, 2ND		CII-K		CII-KF	
		DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE
QUANTITATIVE									
SHOW ME 2 FINGERS	PSAT	.88	.01			.91	.08	.97	.03
SHOW ME 5 FINGERS	PSAT	.88	.10			.58	.21	.80	.13
WHICH IS MORE 9 OR 6	PSAT	.90	.09	.90	.04	.88	.22	.90	.09
WHICH IS MORE 42 OR 38	PSAT	.64	.23	.84	.13	.46	.25	.65	.23
HAVE 3 PENNIES, SPEND ONE. HOW MANY LEFT?	PSAT	.78	.17	.88	.10	.60	.24	.78	.17
3 APPLES AND FOUR APPLES	PSAT	.58	.24	.78	.17	.20	.16	.58	.25
HAD 8 MARBLES, LOST 3. HOW MANY LEFT?	PSAT	.44	.25	.60	.25	.14	.12	.37	.23
1 + 1	PSAT	.83	.14	.90	.09	.24	.18	.71	.19
4 + 1	PSAT	.58	.25	.83	.15	.08	.08	.67	.22
8 + 2	PSAT	.27	.20	.84	.14	.10	.09	.60	.24
3 - 2	PSAT	.51	.25	.78	.17	.08	.08	.38	.24
35 + 36 + 40	PSAT	.10	.09	.33	.22			.12	.10
4 x 3	PSAT	.08	.03	.27	.20			.03	.03
12 x 3	PSAT	.01	.01	.08	.07			.02	.02
38 - 18	PSAT	.10	.09	.48	.25			.14	.12
72 ÷ 8	PSAT			.30	.21				
453 + 137 + 540	PSAT			.13	.11				
8 ÷ 2	PSAT			.08	.07				
COUNTING 10 DOTS	PSAT	7.74*	.60			7.30*	2.61	7.64*	.61
TELL ME WHAT NUMBER: 3	PSAT	.88	.02			.88	.11	.98	.02
5	PSAT	.97	.03			.88	.11	.97	.03
8	PSAT	.97	.03			.78	.16	.96	.04
17	PSAT	.78	.17			.62	.23	.78	.17
41	PSAT	.61	.20			.09	.08	.65	.23
HAD 8 CANDY BARS, ATE 1, GAVE 1 AWAY, HOW MANY LEFT?	MST	.81	.15	.72	.20			.50	.25
HAD 4 PENCILS, GOT 4 MORE. MARK NUMBER PENCILS.	MST	.52	.25	.60	.22			.61	.25
3 PAIR SOCKS. MARK NUMBER SOCKS THEY NEED.	MST	.61	.24	.38	.25			.40	.24
HAD 8 STAMPS, USED 1. MARK HOW MANY HAVE NOW.	MST							.38	.24
PUT MARK ON 5TH BIRD FROM FRONT.	MST	.60	.23	.33	.22			.60	.24
MARK NUMBER THAT MEANS MORE THAN 35, FEWER THAN 40.	MST							.38	.20
MARK THING THAT COSTS MOST MONEY TO BUY.	MST	.61	.22					.67	.22
HAD 3 BUTTONS, GOT 2 MORE, PUT MARK ON HOW MANY HAVE.	MST	.38	.22	.81	.24				
MAKE SIDES EQUAL: [illegible]	SPONSOR	.40	.25						
MAKE SIDES EQUAL: [illegible]	SPONSOR	.30	.22						
1 + 4	SPONSOR	.88	.03						
3 + 2	SPONSOR	.71	.19						
2 + 3 (SUM CHECKED)	SPONSOR	.64	.23						
7 + 2 (SUM CHECKED)	SPONSOR	.70	.21						
7 - 3 (SUM CHECKED)	SPONSOR	.33	.22						
10 - 8 (SUM CHECKED)	SPONSOR	.30	.20						

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* Mean score out of 8 possible.

TABLE B-3 (CONTINUED)

VARIABLE/ITEM	SOURCE	CI, K, NEP		CI-EF, 2ND		CII-K		CII-EF	
		DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE
QUANTITATIVE (continued)									
MARK CIRCLE WHICH IS 1/4 BLACK	MAT			.35	.23				
7 + 1	MAT			.94	.06				
7 + 7	MAT			.80	.16				
43 + 20	MAT			.63	.23				
24 + 5	MAT			.60	.23				
$0.75 + $0.00	MAT			.14	.12				
6 + 3	MAT			.87	.11				
8 + 6	MAT			.73	.20				
2 + 3 + 4	MAT			.77	.18				
15 + 42 + 31	MAT			.55	.25				
12 + 87	MAT			.63	.24				
5 - 4	MAT			.79	.17				
4 - 2	MAT			.79	.16				
7 - 0	MAT			.81	.16				
8 - 2	MAT			.74	.19				
6 - 3	MAT			.78	.18				
6 - 1	MAT			.78	.17				
9 - 4	MAT			.73	.19				
7 - 5	MAT			.75	.19				
18 - 3	MAT			.47	.25				
86 - 43	MAT			.51	.25				
HOW MANY CORNERS - PAPER	PSI					.64	.23		
HOW MANY WHEELS - CAR	PSI					.77	.20	.93	.07
HOW MANY TOES	PSI					.30	.20	.53	.25
POINT TO MIDDLE CHECKER	PSI					.80	.16	.90	.09
POINT TO FIRST CHECKER	PSI					.75	.19	.94	.06
POINT TO LAST CHECKER	PSI					.68	.20	.91	.08
POINT TO SECOND CHECKER	PSI					.33	.23	.74	.19
HEAVIER, BRICK OR SHOE?	PSI					.83	.14		
4 AND 6, WHICH IS LESS? (CHECKERS)	PSI					.68	.25	.68	.21
5 AND 3, WHICH IS MORE? (CHECKERS)	PSI					.30	.20	.48	.25
HOW MANY WHEELS - TRICYCLE	PSI							.70	.21
HOW MANY WHEELS - BICYCLE	PSI							.84	.13
PUT A MARK ON THE DIME	SPONSOR							.91	.08
PUT A MARK ON THE NICKEL	SPONSOR							.92	.07
PUT A MARK ON BOX WITH THE 4 IN IT	ETS					.92	.07		
PUT A MARK ON BOX WITH THE 2 IN IT	ETS					.91	.08		
PUT A MARK ON BOX WITH THE 5 IN IT	ETS					.90	.09		
PUT A MARK ON BOX WITH THE 7 IN IT	ETS					.87	.11		
PUT A MARK ON BOX WITH THE 16 IN IT	ETS					.78	.17	.91	.08
PUT A MARK ON BOX WITH THE 8 IN IT	ETS					.86	.12		
PUT A MARK ON BOX WITH THE 6 IN IT	ETS					.85	.13	.95	.05
PUT A MARK ON BOX WITH THE 18 IN IT	ETS					.64	.23	.92	.08
PUT A MARK ON BOX WITH THE 13 IN IT	ETS					.71	.21	.93	.06
PUT A MARK ON BOX WITH THE 15 IN IT	ETS							.91	.08
PUT A MARK ON BOX WITH THE 17 IN IT	ETS							.93	.07
PUT A MARK ON BOX WITH THE 10 IN IT	ETS							.94	.06
PUT A MARK ON BOX WITH THE 14 IN IT	ETS							.93	.07

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]
[illegible]	[illegible]							[illegible]	[illegible]
[illegible]	[illegible]							[illegible]	[illegible]
[illegible]	[illegible]							[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]			[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]			[illegible]	[illegible]				
[illegible]	[illegible]			[illegible]	[illegible]				
4	SPONSOR			.43	.25				
2	SPONSOR			.47	.25				
7	SPONSOR			.43	.25				
READING									
FOR EACH LETTER IN LINE 1 CHILD IS TO LOCATE A CORRESPONDING LETTER IN LINE 2: A	WRAT					.97	.03		
R	WRAT					.94	.06		
Z	WRAT					.93	.06		
H	WRAT					.94	.06		
I	WRAT					.95	.05		
Q	WRAT					.93	.06		
S	WRAT					.94	.06		
E	WRAT					.93	.06		
B	WRAT					.93	.06		
O	WRAT					.93	.06		
NAME EACH LETTER ALOUD: A	WRAT	.95	.05	.98	.02	.80	.16	.95	.05
B	WRAT	.95	.05	.98	.02	.78	.17	.94	.06
O	WRAT	.95	.05	.99	.01	.79	.16	.96	.04
S	WRAT	.90	.09	.97	.03	.67	.22	.90	.09
E	WRAT	.92	.07	.98	.02	.70	.21	.92	.07
R	WRAT	.89	.10	.97	.03	.62	.23	.88	.10
T	WRAT	.85	.13	.95	.05	.58	.24	.86	.12

TABLE B-2 (CONTINUED)

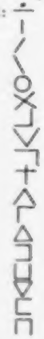
VARIABLE/ITEM		SOURCE	CI, K, NEF		CI-EF, 2ND		CII-K		CII-EF	
			DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE
READING (continued)										
NAME EACH LETTER ALOUD:	H	WRAT	.89	.09	.97	.03	.65	.23	.89	.10
	P	WRAT	.89	.09	.97	.02	.64	.23	.86	.12
	I	WRAT	.58	.24	.77	.18	.55	.25	.57	.25
	U	WRAT	.83	.14	.95	.05	.53	.25	.84	.13
	Z	WRAT	.81	.15	.91	.08	.55	.25	.78	.17
	Q	WRAT	.84	.14	.93	.06	.62	.24	.82	.15
DRAW EACH MARK IN BOX:		WRAT	.96	.04			.87	.11	.96	.04
		WRAT	.97	.03			.91	.09	.96	.04
		WRAT	.93	.07			.72	.20	.90	.09
		WRAT	.93	.07			.71	.20	.89	.09
		WRAT	.96	.04			.88	.11	.95	.05
		WRAT	.93	.06			.67	.22	.88	.10
		WRAT	.82	.15			.59	.24	.76	.18
		WRAT	.86	.12			.53	.25	.77	.18
		WRAT	.77	.18			.61	.24	.70	.21
		WRAT	.94	.06			.77	.17	.91	.08
		WRAT	.84	.13			.50	.25	.78	.17
		WRAT	.84	.14			.59	.24	.78	.17
		WRAT	.73	.20			.35	.23	.68	.22
		WRAT	.82	.15			.47	.25	.78	.17
		WRAT	.80	.16			.46	.25	.77	.18
		WRAT	.57	.25			.23	.17	.45	.25
		WRAT	.72	.20			.39	.24	.67	.22
		WRAT	.72	.20			.40	.24	.70	.21
SAY EACH WORD ALOUD:	CAT	WRAT	.84	.13	.96	.04	.43	.24	.79	.17
	SEE	WRAT	.69	.21	.93	.07	.13	.11	.75	.19
	RED	WRAT	.72	.20	.88	.11	.14	.12	.63	.23
	TO	WRAT	.76	.18	.95	.05	.17	.14	.80	.16
	BIG	WRAT	.61	.24	.86	.12	.12	.10	.61	.24
	WORK	WRAT	.45	.25	.78	.17	.05	.05	.52	.25
	BOOK	WRAT	.54	.25	.87	.12	.09	.08	.57	.25
	EAT	WRAT	.44	.25	.80	.16	.06	.06	.43	.25
	WAS	WRAT	.39	.24	.74	.19	.05	.04	.35	.23
	HIM	WRAT	.51	.25	.81	.16	.10	.09	.46	.25
	HOW	WRAT	.34	.22	.69	.21	.06	.05	.32	.22
	THEN	WRAT	.36	.23	.72	.20	.04	.04	.38	.24
	OPEN	WRAT	.26	.19	.66	.22	.03	.03	.20	.16
	LETTER	WRAT	.25	.19	.67	.22	.03	.03	.26	.19
	JAR	WRAT	.28	.20	.62	.24			.20	.16
	DEEP	WRAT	.20	.16	.53	.25			.12	.11
	EVEN	WRAT	.15	.13	.45	.25			.09	.08
	SPELL	WRAT	.18	.15	.51	.25			.05	.05
	AWAKE	WRAT	.13	.11	.48	.25			.05	.05
	BLOCK	WRAT	.18	.15	.52	.25			.03	.03
	SIZE	WRAT	.12	.10	.42	.24			.13	.12
	WEATHER	WRAT	.12	.10	.41	.24			.07	.07
	SHOULD	WRAT	.08	.08	.40	.24				

TABLE B-2 (CONTINUED)

VARIABLE/ITEM	SOURCE	CI, K, NEF DIFFICULTY	CI, K, NEF VARIANCE	CI-EF, 2ND DIFFICULTY	CI-EF, 2ND VARIANCE	CII-K DIFFICULTY	CII-K VARIANCE	CII-EF DIFFICULTY	CII-EF VARIANCE
READING (continued)									
SAY EACH WORD ALOUD: LIP	WRAT	.32	.22	.51	.25				
FINGER	WRAT	.19	.15	.45	.25				
TRAY	WRAT			.41	.24				
FELT	WRAT			.40	.24				
STALK	WRAT			.28	.20				
CLIFF	WRAT			.36	.23				
LANE	WRAT			.34	.22				
STRUCK	WRAT			.34	.22				
APPROVE	WRAT			.22	.17				
PLOT	WRAT			.35	.23				
HUGE	WRAT			.20	.16				
QUALITY	WRAT			.11	.10				
SOUR	WRAT			.21	.16				
PUT A MARK ON THE "E": ZPIE	NYU					.86	.12	.97	.03
"N": ECNB	NYU					.83	.14	.96	.04
"O": XNBO	NYU					.92	.08		
"Z": OLPZ	NYU					.84	.13		
"X": GIHX	NYU					.90	.09		
"C": CBJD	NYU					.84	.14		
"P": APTU	NYU					.86	.12		
"J": JNCY	NYU					.81	.16		
"Q": QBAS	NYU					.91	.08	.97	.03
"I": IWSH	NYU					.86	.12	.98	.02
"W": DWPT	NYU					.86	.12	.97	.03
"V": LOVB	NYU					.83	.14	.94	.06
"H": VTGH	NYU							.92	.08
"R": QLOR	NYU							.92	.07
"G": GAHL	NYU							.96	.04
"U": YUCB	NYU							.92	.07
"Y": NYBC	NYU							.95	.05
"Z": OLPZ	NYU							.96	.04
MAKE A MARK ON THE "T" IN THE BOX (JTGC)	MET	.87	.12					.93	.07
MARK THE "N": (FANH)	MET	.86	.12					.89	.10
"R": (FSAR)	MET	.92	.07					.93	.07
"J": (DTJK)	MET	.90	.09					.89	.10
"L": (PKJL)	MET	.90	.09					.91	.08
"Q": (QUBI)	MET							.84	.23
COPY EVERY PICTURE ON PAGE:	MET	.87	.11					.84	.14
	MET	.70	.21					.63	.23
	MET							.33	.22
	MET	.39	.24					.36	.23
	MET							.16	.13
	MET	.22	.17					.21	.16
	MET	.43	.25						
	MET	.44	.25						
	MET	.18	.15						

TABLE B-3 (CONTINUED)

VARIABLE/ITEM		SOURCE	CI, K, MEF		CI-KF, 2ND		CII-K		CII-KF	
			DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE
READING (continued)										
LETTER WORD MATCHING:	"[illegible]"	LES-CLASS					.80	.12	.83	.08
	"[illegible]"	LES-CLASS					.63	.23	.95	.05
	"[illegible]"	LES-CLASS					.66	.22	.93	.07
	"[illegible]"	LES-CLASS					.66	.22	.88	.10
	"[illegible]"	LES-CLASS					.71	.20	.95	.05
	"[illegible]"	LES-CLASS					.78	.18	.95	.05
	"[illegible]"	LES-CLASS					.75	.19	.96	.04
	"[illegible]"	LES-CLASS					.81	.16		
	"[illegible]"	LES-CLASS					.75	.19		
	"[illegible]"	LES-CLASS							.90	.10
	"[illegible]"	LES-CLASS							.95	.05
	"[illegible]"	LES-CLASS							.91	.09
	"[illegible]"	LES-CLASS							.88	.10
	"[illegible]"	LES-CLASS							.83	.15
	"[illegible]"	LES-CLASS							.87	.11
	"[illegible]"	LES-CLASS			.71	.19				
	"[illegible]"	LES-CLASS							.81	.16
	"[illegible]"	LES-CLASS							.83	.14
	"[illegible]"	LES-CLASS							.86	.13
	"GOAT"	MET	.50	.24						
	"FORK"	MET	.60	.23	.88	.11				
	"KITTEN"	MET	.73	.20	.90	.10				
([illegible]) PUT MARK ON PICTURES THAT BEGIN WITH SAME SOUND		SPONSOR	.40	.23						
(APPLE) PUT MARK ON PICTURES THAT BEGIN WITH SAME SOUND		SPONSOR	.33	.23						
LETTER DIFFERENT FROM OTHERS IN LINE:	[illegible]	LES-CLASS					.83	.16		
	[illegible]	LES-CLASS					.87	.12		
	[illegible]	LES-CLASS					.88	.11		
	[illegible]	LES-CLASS					.88	.11		
	[illegible]	LES-CLASS					.81	.13		
READ EACH WORD OUT LOUD:	ON	SPONSOR	.45	.24	.60	.24				
	[illegible]	SPONSOR	.34	.23	.84	.13				
	[illegible]	SPONSOR	.30	.20	.34	.23				
	[illegible]	SPONSOR	.24	.18	.32	.23				
	[illegible]	SPONSOR	.44	.23	.71	.20				
	[illegible]	SPONSOR			.27	.22				
	[illegible]	SPONSOR	.27	.20	.61	.24				
	[illegible]	SPONSOR			.27	.22				
	[illegible]	SPONSOR	.10	.08	.38	.22				
	[illegible]	SPONSOR			.40	.24				
	PLAYED	SPONSOR	.08	.07	.31	.22				
	[illegible]	SPONSOR			.40	.24				
	[illegible]	SPONSOR			.27	.20				
	[illegible]	SPONSOR			.27	.20				
	[illegible]	SPONSOR			.27	.22				
	[illegible]	SPONSOR			.30	.22				

TABLE B-2 (CONTINUED)

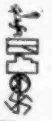
VARIABLE/ITEM		SOURCE	CI, K, NEF		CI-EF, 2ND		CII-K		CII-EF	
			DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE
READING (continued)										
READ STORY TO ME:	SAM	SPONSOR			.74	.19				
	HAD	SPONSOR			.77	.18				
	A	SPONSOR			.91	.08				
	FISH	SPONSOR			.81	.16				
	HE	SPONSOR			.85	.13				
	PUT	SPONSOR			.77	.17				
	THE	SPONSOR			.88	.11				
	FISH	SPONSOR			.81	.15				
	ON	SPONSOR			.83	.14				
	A	SPONSOR			.87	.12				
	DISH	SPONSOR			.70	.21				
	SAM'S	SPONSOR			.72	.20				
	CAT	SPONSOR			.86	.12				
	ATE	SPONSOR			.68	.22				
	THE	SPONSOR			.87	.11				
	FISH	SPONSOR			.81	.16				
ANSWER QUESTION: WHO ATE FISH?		SPONSOR			.62	.24				
MAKE MARK ON PICTURE LIKE ONE ON EDGE:		MET	.75	.19	.84	.14			.68	.22
		MET							.79	.17
		MET	.76	.18	.88	.11			.67	.22
		MET			.59	.24			.46	.25
		MET			.55	.25				
		MET			.82	.14				
PUT YOUR CONE ON CONE IN PICTURE:	TRAIN	SPONSOR	.56	.25						
	HALLWAY	SPONSOR	.77	.17						
	MAN	SPONSOR	.72	.20						
	3 CIRCLES	SPONSOR	.52	.25						
	MANY CIRCLES	SPONSOR	.07	.07						
FIND WORD THAT TELLS WHAT PICTURE IS:	PICTURE	STANFORD			.79	.16				
	OLD	STANFORD			.75	.19				
	GLASSES	STANFORD			.72	.20				
	FLOOR	STANFORD			.69	.22				
	TOWN	STANFORD			.76	.18				
	REACH	STANFORD			.63	.23				
	BRIDGE	STANFORD			.55	.25				
	PACKAGE	STANFORD			.62	.24				
	GUN	STANFORD			.79	.17				
	CHURCH	STANFORD			.81	.16				
	WATER	STANFORD			.81	.15				
	HAT	STANFORD			.85	.12				
	FIGHT	STANFORD			.76	.18				
	BEACH	STANFORD			.49	.25				
	CENT	STANFORD			.52	.25				
	DEER	STANFORD			.69	.21				
	ALONE	STANFORD			.53	.25				
	ASLEEP	STANFORD			.73	.20				
	MOUTH	STANFORD			.63	.23				
	NUMBER	STANFORD			.44	.25				

TABLE B-2 (CONTINUED)

VARIABLE/ITEM	SOURCE	CI, K, NEF		CI-EF, 2ND		CII-K		CII-EF	
		DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE
READING (continued)									
DRAW LINE TO OPPOSITE: OLD-NEW	SPONSOR			.63	.23				
SAD-GLAD	SPONSOR			.52	.25				
DRAW LINE TO WORD SAME AS PICTURE: GATE	SPONSOR			.74	.19				
HAND	SPONSOR			.68	.22				
BEE	SPONSOR			.72	.20				
DRAW LINE TO WORD SAME AS PICTURE INSIDE THE HOUSE	SPONSOR			.57	.25				
DRAW LINE TO WORD SAME AS PICTURE: BAT	SPONSOR			.79	.16				
DRAW LINE TO WORD SAME AS PICTURE BEFORE THE DESK	SPONSOR			.28	.20				
COGNITIVE PROCESSES									
PUT RED CAR ON BLACK BOX	PSI					.88	.10		
PUT YELLOW CAR ON LITTLE BOX	PSI					.70	.21		
PUT BLUE CAR UNDER GREEN BOX	PSI					.65	.23	.75	.19
PUT 2 CARS BEHIND MIDDLE BOX	PSI					.47	.25	.58	.24
POINT TO MIDDLE CHECKER	PSI					.79	.16	.90	.09
POINT TO FIRST CHECKER	PSI					.75	.19	.94	.06
POINT TO LAST CHECKER	PSI					.68	.22	.91	.08
POINT TO SECOND CHECKER	PSI					.53	.25	.74	.19
HEAVIER, BRICK OR SHOE?	PSI					.83	.14	.49	.25
4 AND 6, WHICH LESS?	PSI					.48	.25	.69	.21
5 AND 3, WHICH MORE?	PSI					.38	.20		
PUT MARK ON PICTURE THAT DOES NOT BELONG: (TREE)	SPONSOR	.96	.05					.85	.13
(FLOWER)	SPONSOR	.94	.05					.90	.09
(LAMP)	SPONSOR	.91	.08					.74	.19
(SHOE)	SPONSOR	.92	.07					.88	.10
MARK PICTURE THAT IS OUT OF ORDER: (3)	SPONSOR	.64	.23						
PUT YOUR CONE EXACTLY ON CONE IN PICTURE: TRAIN	SPONSOR	.56	.25						
HALLWAY	SPONSOR	.77	.17						
MAN	SPONSOR	.72	.20						
3 CIRCLES	SPONSOR	.52	.25						
MANY CIRCLES	SPONSOR	.07	.07						
LANGUAGE									
MARK PICTURE THAT I TELL YOU ABOUT:									
BUSY IN SUMMER, SLEEPS WINTER (BEAR)	MET								
GROWS ON TREE (PEAR)	MET	.55	.25					.79	.17
SENT MARK FOR WATER (PAIL WATER)	MET	.73	.19					.71	.21
DOG RAN THROUGH HOSE, WHAT NEXT (DOG SHAKE OR BOY)	MET	.59	.24					.58	.24
JACK BUILT HOUSE AND PUT CHIMNEY ON TOP	MET							.43	.25
MOTHER GOT MONEY, CLERK TIED UP PACKAGE	MET							.64	.23
JOHN BROKE LEG, WHAT HELPED HIM (CRUTCHES)	MET	.67	.22						
STORM, COULD NOT GO TO STORE (MOTHER CALLS)	MET	.58	.24						
MAILING LETTERS IN MAILBOX ON CORNER	MET	.31	.21					.73	.30
WHEEL FELL OFF, RODE HOME. WHAT IS FOOLISH?	SPONSOR	.20	.16	.25	.23				
MAKE A SQUARE	PSI					.92	.08	.90	.01
MAKE A TRIANGLE	PSI					.83	.14		
WHAT CALL (KNEE)?	PSI					.88	.10		

TABLE B-2 (CONTINUED)

VARIABLE/ITEM	SOURCE	CI, K, SEP		CI-SP, 2ND		CII-K		CII-SP	
		DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE	DIFFICULTY	VARIANCE
LANGUAGE (continued)									
SHOW ME YOUR SHOULDER?	PSI					.89	.10		
WHAT IS YOUR LAST NAME?	PSI					.38	.24		
SHOW ME YOUR HEEL	PSI					.82	.15		
WIGGLE	PSI					.78	.17		
WHAT CALL (ELBOW)?	PSI					.76	.18		
WHEN DO WE EAT BREAKFAST?	PSI					.76	.18	.77	.18
WHICH ONE IS THE COLOR OF NIGHT?	PSI					.85	.13	.90	.09
COLOR SPACE PURPLE	PSI					.77	.18	.86	.12
COLOR SPACE ORANGE	PSI					.95	.05		
PICK ANY COLOR, COLOR SQUARE	PSI					.82	.15	.77	.18
PICK ANY COLOR, COLOR TRIANGLE	PSI					.87	.11		
HOW MANY CORNERS - PAPER	PSI					.64	.23		
HOW MANY WHEELS - CAR	PSI					.72	.20	.92	.07
HOW MANY TOES?	PSI					.27	.20	.52	.25
WHO DO YOU GO TO IF SICK?	PSI							.90	.09
WHERE FIND A BOAT?	PSI							.63	.23
WHAT DO TO READ SOMETHING?	PSI							.87	.11
WHAT DOES A DENTIST DO?	PSI					.82	.15	.85	.13
WHAT DOES TEACHER DO?	PSI							.69	.21
WHICH WAY FERRIS WHEEL GO?	PSI							.50	.25
WHICH WAY WATERFALL GO?	PSI							.64	.23
HOW MANY WHEELS - BICYCLE?	PSI							.86	.12
HOW MANY WHEELS - TRICYCLE?	PSI							.70	.21
WINTER/COLD, SUMMER IS ____	SPONSOR	.85	.13						
MOON, STARS SHINE NIGHT - SUN SHINES ____	SPONSOR	.63	.23	.74	.19				
WHAT WAY SHOE, BOOT ALIKE?	SPONSOR	.31	.21	.43	.24				
WHAT WAY CLOCK, RULER ALIKE? ____	SPONSOR	.18	.15	.30	.21				
DAYS OF WEEK: MONDAY	SPONSOR	.85	.13	.93	.06				
TUESDAY	SPONSOR	.83	.13	.92	.07				
WEDNESDAY	SPONSOR	.80	.16	.90	.08				
THURSDAY	SPONSOR	.73	.20	.89	.10				
FRIDAY	SPONSOR	.83	.14	.92	.07				
SATURDAY	SPONSOR	.77	.18	.87	.11				
SUNDAY	SPONSOR	.74	.19	.88	.10				
WHAT DAYS CALLED WEEKEND: SATURDAY	SPONSOR			.80	.16				
SUNDAY	SPONSOR			.80	.16				
WRITE YOUR NAME	WRAT	.00	.00			.00	.00		
RECOGNIZING LETTERS IN NAME	WRAT	.00	.00			.10	.10		
SPELLING WORDS: GO	WRAT	.57	.24	.86	.12	.10	.09	.60	.24
CAT	WRAT	.65	.24	.87	.11	.18	.15	.58	.24
IN	WRAT	.52	.25	.70	.17	.07	.06	.51	.25
BOY	WRAT	.61	.21	.70	.17	.06	.05	.62	.24
AND	WRAT	.60	.24	.72	.19	.02	.02	.62	.24
WILL	WRAT	.38	.23	.60	.22	.02	.02	.36	.23
MAKE	WRAT	.16	.14	.54	.25	.01	.01	.16	.14
HIM	WRAT	.28	.19	.50	.24	.00	.00	.22	.17
SAY	WRAT	.16	.14	.32	.21			.15	.13

[illegible]

[illegible]	[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]									
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
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[illegible]	[illegible]			[illegible]	[illegible]				
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[illegible]	[illegible]			[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]					[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]						
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
BLUEBERRY	MET	.36	.23	.42	.24				
YARN	MET			.72	.20				
AFFECT									
FEEL ABOUT LEARNING OUT OF BOOKS									
FEEL WHEN THINK ABOUT COMING TO SCHOOL									
FEEL ABOUT OTHER BOYS AND GIRLS IN SCHOOL									
FEEL ABOUT LEARNING NEW THINGS									
BOYS AND GIRLS FEEL ABOUT YOU									
HOW TEACHER FEELS ABOUT YOU									
HOW YOU FEEL ABOUT YOUR TEACHER									

Part 2: Summary Statistics and ANCOVA Regression Data

This part of Annex B presents summary tables of regression analyses of outcome measures on control variables. Tables B-3 to B-18 are summarized from each of the 12 independent ANCOVAS conducted on the project-level data. The covariable regression data from each analysis (pupil, parent, teacher for CI-K, CI-EF, CII-K, and CII-EF) are summarized in a separate table (two tables are required to display pupil results--eight variables).

The entries in a given table show the sample size (N), the "error" degrees of freedom (residual df), descriptive statistics* (mean and standard deviation) for each covariable included in the analysis, and regression statistics (zero order correlation coefficient, or r_o; raw regression coefficient; standardized regression coefficient, or beta values, and the standard errors of the raw regression coefficients) for each dependent variable on the covariables. Finally, summary statistics showing the mean and covariable of each dependent variable (both before and after regression on covariables) and the variance explained by the covariables (R^2) are presented.

Inspection of these tables reveals the highly variable contribution of covariance analysis to error reduction. In some instances, the high variance reduction is due to problems of regression shrinkage (e.g., Cohort II-E) and should be disregarded. Overall, the covariance regressions appear to have produced about a 50-percent reduction in error variance on pupil measures. The regression effects tend to be somewhat less pronounced but highly variable for parent and teacher analyses, which suggests that better covariables could be selected for future analyses.

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*The means and standard deviations of the baseline test measures are presented in transformed scale. This scale has the parameters of mean = zero, and standard deviation = reliability of measure.

TABLE B-3

COHORT I, KINDERGARTEN, REGRESSION ON CONTROL VARIABLES:
PUPIL OUTCOMES FOR PROJECT ANALYSES (N = 330, RESIDUAL df = 258)

			ACHIEVEMENT REGRESSION COEFFICIENTS				WRAT REGRESSION COEFFICIENTS				AFFECT REGRESSION COEFFICIENTS				ABSENCE REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_O	RAW	STD	S. E.	r_O	RAW	STD	S. E.	r_O	RAW	STD	S. E.	r_O	RAW	STD	S. E.
COVARIABLE																		
FALL 1969																		
QUANT. PRESCORE	-.027	.519	.680	14.470	.383	3.033	.655	7.243	.373	1.638	.108	.384	.219	.318	.000	.269	.033	.982
COG. PROCESS PRESCORE	-.039	.508	.440	-4.659	-.120	2.255	.410	-2.088	-.135	1.218	-.021	-.516	-.186	.237	-.009	-.368	-.044	.738
READING PRESCORE	-.039	.535	.699	10.019	.273	2.557	.670	5.238	.278	1.381	.063	-.238	-.087	.268	.011	.125	.015	.837
LANGUAGE PRESCORE	-.032	.476	.648	10.001	.243	2.611	.616	5.006	.237	1.410	.075	.035	.018	.274	-.002	.055	.006	.854
AFFECT PRESCORE	-.047	.435	-.041	-4.143	-.089	1.835	-.083	-3.080	-.129	.991	.280	.934	.288	.193	.014	.203	.030	.800
AV. PUPIL AGE (MONTHS)	84.14	1.78	.216	-.093	-.008	.468	.197	-.136	-.024	.253	.047	-.007	-.008	.049	-.017	-.036	-.015	.153
% CLASSROOM MALE	49.03	21.59	-.067	-.032	-.035	.036	-.062	-.013	-.028	.019	.037	.000	.015	.003	-.200	-.041	-.213	.011
% CLASSROOM BLACK	74.19	15.63	-.064	-.046	-.037	.065	-.050	-.047	-.074	.046	.017	-.008	-.085	.008	-.090	.007	.027	.027
% ENGLISH 1ST LANG.	94.28	10.32	.005	-.084	-.049	.082	.003	-.054	-.056	.044	.010	.000	.001	.008	-.021	.007	.018	.026
% PRESCHOOL (OR NO. MOS.)	55.56	21.67	.008	-.080	-.088	.036	.001	-.048	-.105	.019	.105	.005	.077	.003	.033	.007	.036	.012
% PARENTS W/O HS DIPL.	50.92	19.28	-.215	-.019	-.019	.044	-.186	.001	.003	.024	-.107	-.004	-.056	.004	-.015	-.018	.061	.014
% PARENTS W SKILL OCCUP.	35.36	19.63	.101	-.043	-.043	.042	.103	-.012	-.024	.022	.130	.008	.123	.004	-.025	-.000	-.042	.013
% PARENTS BLACK	75.29	15.30	.017	.001	-.039	.066	.046	.073	.110	.047	.057	.013	.148	.009	-.139	-.053	-.193	.026
% PARENTS POVERTY ELIGIBLE	64.48	18.98	-.230	-.029	-.028	.045	-.178	.003	.006	.024	-.115	-.007	-.104	.004	.100	.014	.063	.014
% HEAD HOUSEHOLD EMPLOYED	65.75	19.10	.204	.109	.164	.060	.236	.082	.155	.027	.026	-.005	-.072	.005	-.144	-.033	-.144	.016
% HEAD HOUSEHOLD MALE	56.66	19.84	.115	-.082	-.083	.048	.103	.036	-.071	.036	-.063	.002	.030	.005	-.063	-.001	-.008	.015
SUMMARY STATISTICS																		
MEAN				126.91				64.98				17.53				13.24		
VARIANCE				383.56				101.22				1.97				18.00		
MULTIPLE R				.778				.751				.390				.315		
R^2				.606				.564				.152				.100		
VARIANCE WITH COV'S ELIMINATED				160.68				46.88				1.78				17.21		

TABLE B-4

COHORT I, KINDERGARTEN, REGRESSION ON CONTROL VARIABLES: DISAGGREGATED ACHIEVEMENT PUPIL OUTCOMES FOR PROJECT ANALYSES (N = 330, RESIDUAL df = 258)

			QUANT				COGNITIVE PROCESSES				READING				LANGUAGE			
			REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS			
COVARIABLE	MEAN	S. D.	r_y	RAW	STD	S. E.	r_y	RAW	STD	S. E.	r_y	RAW	STD	S. E.	r_y	RAW	STD	S. E.
FALL 1969																		
QUANT. PRESCORE	-.027	.510	.000	1.140	.420	.074	.015	.302	.224	.103	.033	5.753	.320	1.504	.037	3.215	.240	.035
COG. PROCESS PRESCORE	-.020	.500	.051	-1.340	-.112	.724	.252	-.191	-.110	.135	.307	-2.329	-.141	1.119	.030	-.270	-.080	.621
READING PRESCORE	-.020	.525	.073	2.352	.200	.821	.080	.083	.280	.153	.060	5.289	.311	1.288	.030	1.084	.208	.704
LANGUAGE PRESCORE	-.032	.476	.040	2.278	.283	.838	.019	.187	.100	.156	.046	4.417	.236	1.295	.588	1.079	.194	.719
AFFECT PRESCORE	-.047	.425	.000	-.540	-.035	.580	-.027	-.140	-.070	.110	-.076	-2.072	-.125	.910	-.021	-.740	-.080	.505
AV. PUPIL AGE (MONTHS)	64.14	1.79	.103	-.123	-.038	.150	.174	.013	.025	.030	.180	-.130	-.025	.233	.240	.153	.056	.120
% CLASSROOM MALE	49.03	21.50	-.033	-.000	-.002	.012	.035	.002	.057	.002	-.018	-.012	-.029	.018	-.127	-.022	-.080	.010
% CLASSROOM BLACK	74.10	11.43	-.105	-.030	-.080	.027	-.044	.007	.124	.005	-.060	-.030	-.065	.042	-.012	.021	.086	.026
% ENGLISH 1ST LANG.	84.38	16.39	.050	-.017	-.028	.020	-.007	-.002	-.022	.005	-.023	-.071	-.080	.041	.051	-.005	-.011	.023
% PRESCHOOL (OR NO. MOS.)	55.14	20.47	.000	-.020	-.102	.012	.027	-.002	-.050	.002	.016	-.028	-.080	.018	-.000	-.022	-.097	.010
% PARENTS H/S HS DIPL.	50.82	19.28	-.215	-.050	-.033	.014	-.185	-.003	-.076	.003	-.194	-.005	-.050	.002	-.203	-.001	-.003	.012
% PARENTS W SKILL OCCUP.	26.36	16.63	.103	-.012	-.030	.016	.073	-.002	-.046	.003	.072	-.020	-.081	.021	.137	.000	.002	.012
% PARENTS BLACK	73.20	15.20	-.014	.022	.014	.030	-.049	-.011	-.103	.005	.038	.058	.083	.044	.030	-.013	.047	.026
% PARENTS POVERTY ELIGIBLE	64.48	18.06	-.140	.016	.013	.015	-.107	-.002	-.038	.003	-.200	-.012	-.025	.023	-.250	-.022	-.097	.013
% HEAD HOUSEHOLD EMPLOYED	60.75	19.10	.230	.040	.143	.016	.107	.010	.140	.003	.250	.079	.164	.033	.233	.037	.140	.016
% HEAD HOUSEHOLD MALE	58.68	18.84	.110	-.050	-.065	.010	.020	-.008	-.103	.003	.117	-.033	-.072	.024	.102	-.023	-.094	.013
SUMMARY STATISTICS																		
MEAN				20.100				7.050				54.38				28.63		
VARIANCE				27.400				.700				83.030				23.369		
MULTIPLE R				.704				.546				.743				.716		
R^2				.508				.300				.552				.513		
VARIANCE WITH COV'S ELIMINATED				16.556				.570				39.520				12.183		

TABLE B-5

COHORT I, KINDERGARTEN, REGRESSION ON CONTROL VARIABLES:
PARENT OUTCOMES FOR PROJECT ANALYSES (N = 296, RESIDUAL df = 236)

			PARENT CHILD INTERACT. REGRESSION COEFFICIENTS				PARENT SCHOOL INVOLVE. REGRESSION COEFFICIENTS				CHILD ACADEMIC EXPECT. REGRESSION COEFFICIENTS				SENSE OF CONTROL REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
% W/O HS DIPLOMA	59.81	19.819	-.160	-.002	-.076	.001	-.123	-.003	-.095	.002	-.041	-.001	-.034	.002	-.062	-.001	-.039	.002
% W SKILLED OCCUP.	35.17	19.933	.138	.002	.083	.001	.039	.001	.027	.002	.027	-.002	-.047	.002	-.059	-.002	-.087	.002
% EVAL CHILD LRNG POSITIVE	78.84	18.413	.077	.001	.042	.001	.087	.002	.060	.002	.443	.016	.438	.002	.161	.005	.156	.002
% BLACK	75.42	15.777	.070	.002	.083	.002	.106	.004	.110	.002	-.201	-.009	-.208	.003	.116	.004	.111	.002
% REPORTING USE OF PRESCH.	56.98	19.140	-.095	-.002	-.101	.001	.188	.006	.188	.002	.055	.000	.013	.002	.107	.002	.084	.002
% POVERTY ELIGIBLE	64.53	19.626	-.157	-.001	-.064	.002	-.039	-.001	-.024	.002	-.051	.001	.024	.002	-.042	-.001	-.037	.002
% HEAD HOUSEHOLD EMPLOYED	65.54	19.073	.206	.003	.129	.002	.027	-.003	-.086	.002	.088	.003	.088	.002	.066	.001	.031	.002
% HEAD HOUSEHOLD MALE	58.20	19.651	.141	.001	.037	.002	.050	.003	.103	.002	.048	-.003	-.094	.002	.025	-.000	-.005	.002
SUMMARY STATISTICS																		
MEAN			.023				.016				.095				.033			
VARIANCE			.184				.332				.436				.315			
MULTIPLE R			.290				.262				.489				.241			
R^2			.084				.069				.239				.058			
VARIANCE WITH COV'S ELIMINATED			.174				.320				.343				.307			

TABLE B-6

COHORT I, KINDERGARTEN, REGRESSION ON CONTROL VARIABLES: TEACHER OUTCOMES FOR PROJECT ANALYSES (N = 195, RESIDUAL df = 146)

			PARENT EDUCATOR IMAGE REGRESSION COEFFICIENTS				PROFESSIONAL ACCEPTANCE OF FT REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD.	S. E.
COVARIABLE										
JOB SATISF. RATING	1.77	.376	.037	.028	.042	.055	.320	.314	.320	.076
BOOK RESOURCE SCALE	3.38	.934	.032	-.000	-.002	.022	-.069	-.030	-.078	.030
RACE (BLACK/NONBLACK)	.600	.285	-.085	-.062	-.070	.070	-.180	-.208	-.161	.098
IDENT. W. COMMUNITY	.567	.543	-.106	-.024	-.052	.038	.119	.024	.035	.053
NO. HELPERS	1.29	.512	.260	.120	.243	.040	-.170	-.129	-.179	.056
ABLE TO CHOOSE ASSIGN.	1.61	.918	-.051	-.028	-.103	.022	.030	.002	.006	.031
TRNG & TEACHER EXPER.	5.08	1.18	.160	.032	.151	.017	-.019	.0001	.0004	.024
SUMMARY STATISTICS										
MEAN					.389				1.59	
VARIANCE					.064				.135	
MULTIPLE R					.326				.415	
R^2					.106				.172	
VARIANCE WITH COV'S ELIMINATED					.060				.118	

TABLE B-7

COHORT I, ENTERING FIRST, REGRESSION ON CONTROL VARIABLES: PUPIL OUTCOMES FOR PROJECT ANALYSES (N = 123, RESIDUAL df = 50)

			ACHIEVEMENT REGRESSION COEFFICIENTS				WRAT REGRESSION COEFFICIENTS				AFFECT REGRESSION COEFFICIENTS				ABSENCE REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
FALL 1969																		
QUANT. PRESCORE	.019	.525	.671	.473	.011	7.576	.553	-.655	-.042	3.259	.281	.752	.354	.491	-.260	-5.669	-.582	2.510
COG. PROCESS PRESCORE	-.069	.590	.573	5.633	.150	5.068	.468	1.269	.092	2.180	.310	.292	.154	.328	-.114	2.777	.320	1.679
READING PRESCORE	.120	.567	.720	18.340	.470	5.268	.622	6.256	.438	2.266	.026	-1.032	-.524	.341	-.094	3.377	.374	1.745
LANGUAGE PRESCORE	-.074	.560	.553	3.251	.082	5.436	.465	1.079	.074	2.338	.244	.944	.474	.352	-.155	-3.913	-.428	1.800
AFFECT PRESCORE	-.039	.505	.440	3.627	.082	3.690	.366	.872	.054	1.587	-.086	-.645	-.292	.239	.058	2.124	.209	1.222
AV. PUPIL AGE (MONTHS)	98.34	2.39	.173	1.550	.167	.676	.156	.571	.168	.290	.046	.046	.100	.043	-.117	-.425	-.198	.224
% CLASSROOM MALE	52.90	25.59	-.181	-.102	-.118	.065	-.186	-.046	-.148	.028	-.031	-.001	-.041	.004	.014	.010	.052	.021
% CLASSROOM BLACK	46.81	25.58	-.139	-.116	-.134	.132	-.099	-.034	-.110	.057	-.130	-.003	-.089	.008	.162	.075	.377	.044
% ENGLISH 1ST LANG.	86.98	16.76	.068	.089	.067	.147	.106	.053	.111	.063	-.190	-.022	-.342	.009	.138	.013	.043	.048
% PRESCHOOL (OR NO. MOS.)	61.19	25.43	-.063	.003	.004	.068	-.047	-.005	-.016	.029	.073	.006	.159	.004	-.098	-.015	-.078	.022
% PARENTS W/O HS DIPL.	65.34	13.96	-.228	.058	.037	.127	-.253	-.006	-.010	.054	-.154	-.010	-.130	.008	.038	-.022	-.061	.042
% PARENTS W SKILL OCCUP.	35.30	14.26	.282	.082	.053	.127	.297	.051	.091	.055	.059	-.005	-.065	.008	-.020	.002	.007	.042
% PARENTS BLACK	47.95	19.96	-.209	.084	.075	.145	-.178	.023	.057	.062	.004	.007	.140	.009	.022	-.079	-.309	.048
% PARENTS POVERTY ELIGIBLE	58.17	14.28	-.294	-.190	-.123	.117	-.284	-.057	-.102	.050	-.097	-.006	-.084	.007	.094	.032	.092	.038
% HEAD HOUSEHOLD EMPLOYED	83.46	12.85	.133	-.000	-.000	.135	.136	-.001	-.002	.058	.047	.001	.018	.008	.001	-.003	-.009	.044
% HEAD HOUSEHOLD MALE	81.97	9.89	.256	.191	.085	.182	.256	.079	.097	.078	.104	.006	.057	.011	-.045	-.001	-.003	.060
SUMMARY STATISTICS																		
MEAN				138.6				37.05				18.51				10.15		
VARIANCE				488.1				65.33				1.24				26.16		
MULTIPLE R					.796				.706				.634				.508	
R^2					.638				.499				.402				.258	
VARIANCE WITH COV'S ELIMINATED				210.2				38.90				.883				23.07		

TABLE B-8

COHORT I, ENTERING FIRST, REGRESSION ON CONTROL VARIABLES: DISAGGREGATED ACHIEVEMENT PUPIL OUTCOMES FOR PROJECT ANALYSES (N = 133, RESIDUAL df = 85)

			QUANTITATIVE REGRESSION COEFFICIENTS				COGNITIVE PROCESSES REGRESSION COEFFICIENTS				READING REGRESSION COEFFICIENTS				LANGUAGE REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
FALL 1969																		
QUANT. PRESCORE	.019	.525	.724	2.168	.171	2.277					.383	-1.456	-.058	5.037	.587	-.255	-.033	1.507
COG. PROCESS PRESCORE	-.069	.580	.608	2.319	.206	1.533					.487	2.452	.110	3.363	.553	1.030	.147	1.008
READING PRESCORE	.130	.567	.719	4.582	.381	1.582					.653	11.050	.475	3.496	.629	2.751	.381	1.048
LANGUAGE PRESCORE	-.074	.580	.586	.096	.008	1.634					.466	2.973	.126	3.607	.537	.116	.016	1.061
AFFECT PRESCORE	-.039	.505	.487	1.953	.148	1.109					.330	-.504	-.019	2.449	.536	2.134	.263	.734
AV. PUPIL AGE (MONTHS)	98.34	3.39	.140	.384	.102	.203					.194	1.167	.211	.449	.091	.117	.068	.135
% CLASSROOM MALE	52.90	25.59	-.071	.011	.042	.030					-.210	-.090	-.174	.044	-.193	-.034	-.150	.013
% CLASSROOM BLACK	46.81	25.56	-.100	-.021	-.080	.040					-.159	-.078	-.151	.088	-.085	-.018	-.113	.026
% ENGLISH 1ST LANG.	86.98	16.76	.084	.035	.088	.044					.036	.040	.051	.098	.119	.016	.067	.029
% PRESCHOOL (OR NO. MOS.)	61.19	25.43	-.027	.022	.086	.021					-.056	-.009	-.017	.046	-.118	-.009	-.056	.014
% PARENTS W/O HS DIPL.	65.34	13.96	-.121	.055	.116	.038					-.246	-.000	-.000	.085	-.235	.007	.024	.025
% PARENTS W SKILL OCCUP.	35.30	14.26	.202	.003	.006	.038					.280	.052	.056	.085	.287	.022	.078	.025
% PARENTS BLACK	47.95	19.96	-.200	.000	.001	.044					-.208	.059	.089	.097	-.143	.024	.116	.029
% PARENTS POVERTY ELIGIBLE	58.17	14.28	-.156	-.009	-.020	.035					-.321	-.147	-.159	.078	-.308	-.036	-.125	.023
% HEAD HOUSEHOLD EMPLOYED	83.46	12.85	.074	-.009	-.017	.041					.142	-.001	-.001	.090	.144	.003	.009	.027
% HEAD HOUSEHOLD MALE	81.97	9.89	.207	.055	.082	.055					.248	.101	.076	.121	.274	.052	.124	.036
SUMMARY STATISTICS																		
MEAN				38.89								76.71				22.84		
VARIANCE				44.119								174.169				16.746		
MULTIPLE R				.799								.744				.763		
R^2				.638								.553				.582		
VARIANCE WITH COV'S ELIMINATED				18.979								92.526				8.315		

TABLE B-9

COHORT I, ENTERING FIRST, REGRESSION ON CONTROL VARIABLES:
PARENT OUTCOMES FOR PROJECT ANALYSES (N = 105, RESIDUAL df = 77)

			PARENT CHILD INTERACT. REGRESSION COEFFICIENTS				PARENT SCHOOL INVOLVE. REGRESSION COEFFICIENTS				CHILD ACADEMIC EXPECT. REGRESSION COEFFICIENTS				SENSE OF CONTROL REGRESSION COEFFICIENTS			
	MEAN	S. D.	ro	RAW	STD	S. E.	ro	RAW	STD	S. E.	ro	RAW	STD	S. E.	ro	RAW	STD	S. E.
COVARIABLE																		
% W/O HS DIPLOMA	65.62	14.806	-.236	-.002	-.069	.004	-.334	-.011	-.336	.004	-.280	-.010	-.274	.004	-.099	-.000	-.014	.004
% W SKILLED OCCUP.	34.31	15.240	.194	.007	.235	.004	.179	.007	.197	.004	.178	.005	.141	.004	.242	.010	.358	.004
% EVAL CHILD LRNG POSITIVE	71.34	20.136	.040	.000	.008	.002	-.206	-.005	-.184	.003	.490	.013	.505	.003	.083	.001	.061	.002
% BLACK	48.01	21.055	.193	.006	.264	.003	.172	.004	.155	.003	-.011	-.001	-.030	.003	.042	.003	.149	.002
% REPORTING USE OF PRESCH.	60.11	17.428	-.048	-.002	-.064	.003	.191	.005	.172	.003	.046	.003	.095	.003	-.149	-.004	-.166	.003
% POVERTY ELIGIBLE	58.32	15.313	-.253	-.006	-.210	.004	.052	.005	.156	.004	.042	.005	.138	.004	.122	.007	.235	.003
% HEAD HOUSEHOLD EMPLOYED	82.50	13.961	.069	.002	.070	.004	-.227	-.009	-.239	.004	-.013	-.001	-.030	.004	-.079	-.004	-.123	.004
% HEAD HOUSEHOLD MALE	81.10	10.694	-.030	-.008	-.177	.005	-.030	.002	.048	.006	-.134	-.013	-.271	.006	.066	.003	.078	.005
SUMMARY STATISTICS																		
MEAN				.010				-.033				.050				.129		
VARIANCE				.215				.264				.296				.203		
MULTIPLE R				.424				.554										
R^2				.180				.306				.397				.167		
VARIANCE WITH COV'S ELIMINATED				.195				.202				.197				.187		

TABLE B-10

COHORT I, ENTERING FIRST, REGRESSION ON CONTROL VARIABLES: TEACHER OUTCOMES FOR PROJECT ANALYSES (N = 63, RESIDUAL df = 41)

			PARENT EDUCATOR IMAGE REGRESSION COEFFICIENTS				PROFESSIONAL ACCEPTANCE OF FT REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE										
JOB SATISF. RATING	1.93	.366	.051	.066	.092	.116	.443	.568	.441	.174
BOOK RESOURCE SCALE	3.59	.919	-.255	-.075	-.265	.042	.166	.069	.135	.064
RACE (BLACK/NONBLACK)	.719	.309	-.031	-.055	-.065	.135	-.107	-.096	-.063	.203
IDENT. W. COMMUNITY	1.14	.580	-.007	-.019	-.043	.076	.068	-.101	-.125	.114
NO. HELPERS	1.14	.429	.122	.077	.128	.091	-.308	-.366	-.333	.136
ABLE TO CHOOSE ASSIGN.	1.89	1.11	-.004	-.002	-.011	.038	.302	.074	.174	.057
TRNG & TEACHER EXPER.	4.75	1.58	-.105	-.013	-.083	.026	.175	.017	.057	.039
SUMMARY STATISTICS										
MEAN				.278				1.70		
VARIANCE				.068				.223		
MULTIPLE R				.316				.618		
R^2				.100				.382		
VARIANCE WITH COV'S ELIMINATED				.072				.161		

TABLE B-11

COHORT II, KINDERGARTEN, REGRESSION ON CONTROL VARIABLES:
PUPIL OUTCOMES FOR PROJECT ANALYSES (N = 51, RESIDUAL df = 19)

			ACHIEVEMENT REGRESSION COEFFICIENTS				WRAT REGRESSION COEFFICIENTS				AFFECT REGRESSION COEFFICIENTS				ABSENCE REGRESSION COEFFICIENTS			
	MEAN	S. T.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
FALL 1970																		
QUANT. PRESCORE	.028	.409	.292	-.893	-.044	11.185	-.020	-7.042	-.528	7.798	.335	.384	.114	1.623	-.279	-10.614	-1.029	5.321
COG. PROCESS PRESCORE	.099	.447	.240	4.134	.236	8.949	-.019	7.007	.575	6.239	.127	-.499	-.162	1.299	-.098	5.105	.542	4.257
READING PRESCORE	.015	.335	.468	16.674	.684	9.409	.234	12.900	.793	6.560	.436	1.164	.284	1.366	-.131	-2.050	-.163	4.476
LANGUAGE PRESCORE	.068	.328	.428	-3.745	-.150	9.740	.162	-9.017	-.542	6.790	.414	-.600	-.143	1.414	.139	5.835	.453	4.633
AFFECT PRESCORE	.034	.545	.177	-.154	-.010	3.242	.203	2.756	.275	2.260	.503	1.059	.420	.470	.395	3.348	.433	1.542
AV. PUPIL AGE (MONTHS)	72.92	1.51	.077	1.730	.319	1.393	-.111	1.043	.288	.970	.447	.327	.359	.202	-.267	-.967	-.345	.662
% CLASSROOM MALE	49.29	20.07	-.013	-.134	-.330	.145	.003	-.159	-.586	.101	-.350	-.016	-.237	.021	-.131	.022	.108	.069
% CLASSROOM BLACK	64.93	11.25	.036	.628	.881	.308	.151	.494	1.020	.214	-.355	-.018	-.152	.044	.136	-.159	-.426	.146
% ENGLISH 1ST LANG.	99.30	2.34	.006	-.981	-.268	.964	.001	-.337	-.138	[illegible]	-.164	-.007	-.011	.140	-.161	.027	.014	.458
% PRESCHOOL (OR NO. MOS.)	3.19	2.10	-.244	-.886	-.227	.852	-.284	-.461	-.177	.594	.101	.045	.070	.123	-.075	.065	.032	.405
% W/O HS DIPL.	52.44	12.66	-.243	-.239	-.370	.176	-.194	-.129	-.301	.123	.045	-.021	-.200	.025	.003	-.003	-.009	.084
% PARENTS W SKILL OCCUP.	41.32	13.69	.257	.057	.096	.144	.177	.083	.206	.100	-.021	-.007	-.079	.030	-.203	-.014	-.048	.068
% PARENTS BLACK	65.39	7.06	.018	-.283	-.244	.328	-.035	-.290	-.376	.228	.068	.046	.337	.047	.142	.194	.326	.156
% PARENTS POVERTY ELIGIBLE	44.36	15.19	-.046	.181	.339	.205	.002	.086	.240	.143	.036	.018	.306	.029	.039	.045	.162	.097
% HEAD HOUSEHOLD EMPLOYED	67.45	14.55	.004	.131	.234	.196	-.069	.094	.252	.137	.026	.021	.225	.028	.009	.043	.150	.093
% HEAD HOUSEHOLD MALE	59.70	17.07	.043	-.061	-.128	.132	-.042	-.038	-.184	.092	.110	.003	.044	.019	.058	.025	.102	063
SUMMARY STATISTICS																		
MEAN				105.3				47.74				16.85				13.98		
VARIANCE				66.56				29.65				1.88				17.73		
MULTIPLIER R				.708				.675				.792				.759		
R^2				.502				.456				.628				.577		
VARIANCE WITH COV'S ELIMINATED				61.11				29.70				1.29				13.83		

TABLE B-12

COHORT II, KINDERGARTEN, REGRESSION ON CONTROL VARIABLES: DISAGGREGATED ACHIEVEMENT PUPIL OUTCOMES FOR PROJECT ANALYSES (N = 51, RESIDUAL df = 19)

			QUANTITATIVE REGRESSION COEFFICIENTS				COGNITIVE PROCESSES REGRESSION COEFFICIENTS				READING REGRESSION COEFFICIENTS				LANGUAGE REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
FALL 1970																		
QUANT. PRESCORE	.028	.409	.393	.387	.066	3.252	.558	1.912	1.034	.711	.092	-3.765	-.295	7.251	.365	.455	.136	1.655
COG. PROCESS PRESCORE	.099	.447	.355	1.751	.325	2.602	.467	-1.002	-.593	.569	.033	3.873	.333	5.802	.392	-.370	-.121	1.324
READING PRESCORE	.015	.335	.464	3.840	.534	2.735	.445	-.244	-.108	.598	.352	12.801	.823	6.100	.385	.353	.086	1.392
LANGUAGE PRESCORE	.068	.328	.302	-2.034	-.277	2.832	.436	.948	.411	.619	.300	-6.146	-.387	6.315	.614	2.986	.716	1.441
AFFECT PRESCORE	.034	.545	.138	.240	.054	.943	-.195	-.653	-.471	.206	.248	1.237	.129	2.102	.009	-.791	-.315	.480
AV. PUPIL AGE (MONTHS)	79.92	1.51	.037	.356	.223	.405	.380	.179	.356	.089	-.047	1.019	.295	.903	.362	.200	.221	.206
% CLASSROOM MALE	49.29	20.07	.184	-.006	-.052	.042	.080	.016	.428	.009	-.062	-.160	-.615	.094	-.217	.013	.191	.021
% CLASSROOM BLACK	64.93	11.25	.048	.109	.510	.090	-.093	.017	.249	.020	.119	.491	1.061	.200	-.252	.023	.186	.046
% ENGLISH 1ST LANG.	99.30	2.24	.104	-.211	-.196	.280	-.038	-.146	-.433	.061	-.032	-.397	-.170	.625	-.004	-.211	-.346	.143
% PRESCHOOL (OR NO. MOS.)	3.19	2.10	-.131	-.248	-.216	.248	.066	-.078	-.217	.054	-.272	-.423	-.170	.552	-.228	-.157	-.241	.126
% PARENTS W/O HS DIPL.	52.44	12.66	-.246	-.057	-.297	-.051	-.135	-.027	-.445	.011	-.226	-.136	-.330	.115	-.090	-.025	-.232	.026
% PARENTS W SKILL OCCUP.	41.32	13.69	.250	.032	.183	.042	.208	-.007	-.127	.009	.217	.053	.140	.093	.172	-.012	-.125	.021
% PARENTS BLACK	65.29	7.06	.098	.013	.038	.095	.158	.014	.129	.021	-.009	-.275	-.373	.213	-.088	-.021	-.108	.049
% PARENTS PROVERTY ELIGIBLE	44.36	15.19	.020	.032	.202	.060	-.022	.030	.608	.013	-.119	.086	.250	.133	.192	.043	.476	.030
% HEAD HOUSEHOLD EMPLOYED	67.45	14.55	-.108	.015	.091	.057	.061	.004	.074	.013	.073	.102	.286	.128	-.136	.011	.113	.029
% HEAD HOUSEHOLD MALE	57.70	17.07	-.174	-.046	-.324	.038	.195	.011	.247	.008	.135	.012	.041	.086	-.065	-.009	-.115	.020
SUMMARY STATISTICS																		
MEAN				28.10				7.934				51.32				17.95		
VARIANCE				5.803				.570				27.129				1.869		
MULTIPLE R				.719				.875				.697				.782		
R^2				.517				.765				.486				.612		
VARIANCE WITH COV'S ELIMINATED				5.164				.247				25.684				1.337		

TABLE B-13

COHORT II, KINDERGARTEN, REGRESSION ON CONTROL VARIABLES:
PARENT OUTCOMES FOR PROJECT ANALYSES (N = 46, RESIDUAL df = 24)

			PARENT CHILD INTERACT.				PARENT SCHOOL INVOLVE.				CHILD ACADEMIC EXPECT.				SENSE OF CONTROL			
			REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
% W/O HS DIPLOMA	52.36	12.848	.044	.006	.248	.007	.131	.010	.343	.008	.086	-.001	-.030	.006	-.008	.003	.104	.009
% W SKILLED OCCUP.	40.76	14.168	-.121	-.002	-.096	.006	.128	.001	.046	.007	-.271	-.001	-.030	.006	.110	.004	.139	.008
% EVAL CHILD LRNG POSITIVE	74.63	12.974	.148	.005	.186	.005	-.250	-.007	-.225	.006	.582	.015	.598	.005	.007	.002	.070	.007
% BLACK	62.15	7.348	.224	.010	.220	.009	-.044	-.004	-.068	.010	-.026	-.001	-.017	.008	.004	.003	.057	.012
% REPORTING USE OF PRESCH.	68.11	19.406	-.164	-.001	-.062	.004	-.023	.001	.037	.005	-.007	-.000	-.015	.003	.160	.004	.202	.005
% POVERTY ELIGIBLE	45.24	15.579	-.256	-.013	-.641	.009	-.164	-.009	-.371	.010	.022	.000	.020	.008	-.042	-.003	-.129	.012
% HEAD HOUSEHOLD EMPLOYED	67.40	15.085	.158	-.007	-.313	.007	.157	-.003	-.110	.009	.102	.006	.261	.007	.052	.002	.066	.010
% HEAD HOUSEHOLD MALE	58.91	17.805	.141	-.000	-.0[illegible]3	.005	.092	-.002	-.099	.006	-.003	-.003	-.147	.005	-.017	-.005	-.220	.007
SUMMARY STATISTICS																		
MEAN				-.012				.193				.098				.167		
VARIANCE				.106				.152				.119				.157		
MULTIPLE R				.470				.379				.618				.245		
R^2				.221				.144				.381				.060		
VARIANCE WITH COV'S ELIMINATED				.110				.174				.098				.197		

TABLE B-14

COHORT II, KINDERGARTEN, REGRESSION ON CONTROL VARIABLES: TEACHER OUTCOMES FOR PROJECT ANALYSES (N = 19, RESIDUAL df = 4)

			PARENT EDUCATOR IMAGE REGRESSION COEFFICIENTS				PROFESSIONAL ACCEPTANCE OF FT REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE										
JOB SATISF. RATING	1.88	.487	-.361	.051	.102	.161	.051	-.251	-.405	.513
BOOK RESOURCE SCALE	2.53	.937	-.151	-.046	-.177	.095	.000	-.066	-.208	.302
RACE (BLACK/NONBLACK)	.895	.302	-.265	-.238	-.294	.181	-.500	-.674	-.674	.576
IDENT. W. COMMUNITY	.737	.769	-.729	-.106	-.335	.125	.196	-.071	-.182	.399
NO. HELPERS	1.32	.640	.583	.129	.339	.082	-.471	-.246	-.523	.261
ABLE TO CHOOSE ASSIGN.	1.79	1.07	-.729	-.121	-.537	.041	.280	.178	.636	.131
TRNG & TEACHER EXPER.	5.68	1.83	.430	.015	.116	.071	-.164	.013	.084	.228
SUMMARY STATISTICS										
MEAN				.437				1.79		
VARIANCE				.059				.091		
MULTIPLE R				.976				.832		
R^2				.953				.692		
VARIANCE WITH COV'S ELIMINATED				.008				.077		

TABLE B-15

COHORT II, ENTERING FIRST, REGRESSION ON CONTROL VARIABLES: PUPIL OUTCOMES FOR PROJECT ANALYSES (N = 31, RESIDUAL df = 8)

			ACHIEVEMENT REGRESSION COEFFICIENTS				WRAT REGRESSION COEFFICIENTS				AFFECT REGRESSION COEFFICIENTS				ABSENCE REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
FALL 1970																		
QUANT. PRESCORE	-.077	.535	.742	-12.00	-.463	17.574	.730	-8.96	-.527	11.79	.697	-1.67	-.888	1.05	-.320	-.315	-.048	6.298
COG. PROCESS PRESCORE	-.070	.537	.801	17.72	.665	13.449	.782	9.78	.577	9.02	.795	2.63	1.40	.802	-.501	-6.797	-1.048	4.820
READING PRESCORE	-.119	.565	.644	13.19	.528	13.064	.655	13.69	.836	8.77	.691	.399	.230	.779	-.130	3.952	.630	4.682
LANGUAGE PRESCORE	-.051	.459	.712	6.47	.214	9.444	.678	.17	.009	6.34	.590	-.523	-.230	.964	-.429	-1.414	-.187	3.385
AFFECT PRESCORE	-.072	.377	.437	-4.76	-.130	11.506	.662	-6.09	-.263	7.73	.542	1.06	.399	.697	.023	1.452	.157	4.124
AV. PUPIL AGE (MONTHS)	86.46	2.83	-.038	.30	.062	1.073	-.013	.45	.139	.72	.170	.061	.172	.064	-.010	.331	.269	.384
% CLASSROOM MALE	51.37	15.75	.068	-.15	-.170	.157	.076	-.10	-.161	.11	.333	.016	.354	.009	-.106	-.030	-.176	.056
% CLASSROOM BLACK	50.34	14.58	-.217	.40	.416	.376	-.167	.36	.411	.25	-.199	-.002	-.024	.023	.065	-.085	-.355	.136
% PRESCHOOL (OR NO. MOS.)	5.21	2.55	.097	.71	.131	1.024	.145	1.05	.294	.69	.088	-.021	-.053	.061	-.244	-.018	-.014	.367
% PARENTS W/O HS DIPL.	70.39	11.95	-.400	-.41	-.357	.329	-.453	-.37	-.490	.22	-.338	-.002	-.024	.020	.334	.026	.091	.118
% PARENTS W SKILL OCCUP.	32.61	15.29	.308	.18	.199	.201	.398	.21	.353	.13	.306	.017	.252	.012	.026	.097	.428	.072
% PARENTS BLACK	52.18	13.62	-.211	-.76	-.784	.404	-.208	-.55	-.823	.27	-.182	-.011	-.150	.024	.124	.110	.430	.145
% PARENTS POVERTY ELIGIBLE	50.10	18.01	-.197	.63	.825	.243	-.217	.44	.866	.16	-.249	.007	.121	.015	.098	.090	.464	.087
% HEAD HOUSEHOLD EMPLOYED	81.77	10.33	.376	.02	.014	.388	.343	.04	.044	.26	.446	-.016	-.167	.023	-.024	.137	.408	.139
% HEAD HOUSEHOLD MALE	73.17	11.55	.206	.69	.574	.270	.147	.41	.526	.18	.162	.037	.428	.016	.224	.104	.346	.097

SUMMARY STATISTICS	ACHIEVEMENT	WRAT	AFFECT	ABSENCE
MEAN	124.7	61.90	17.43	13.98
VARIANCE	192.06	82.64	1.01	12.12
MULTIPLE R	.936	.942	.957	.759
R^2	.876	.886	.916	.576
VARIANCE WITH COV'S ELIMINATED	68.74	27.08	.244	8.83

TABLE B-16

COHORT II, ENTERING FIRST, REGRESSION ON CONTROL VARIABLES: DISAGGREGATED ACHIEVEMENT PUPIL OUTCOMES FOR PROJECT ANALYSES (N = 31, RESIDUAL df = 8)

			QUANTITATIVE REGRESSION COEFFICIENTS				COGNITIVE PROCESSES REGRESSION COEFFICIENTS				READING REGRESSION COEFFICIENTS				LANGUAGE REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
FALL 1970																		
QUANT. PRESCORE	-.077	.535	.740	-4.934	-.533	7.487	.626	-.258	-.102	2.784	.714	-6.785	-.448	9.781	.756	-6.732	-1.100	3.866
COG. PROCESS PRESCORE	-.070	.537	.789	7.098	.770	5.730	.711	2.654	1.056	2.130	.770	7.967	.528	7.485	.859	7.575	1.141	2.959
READING PRESCORE	-.119	.555	.633	3.971	.446	5.566	.499	-1.840	-.757	2.069	.632	11.026	.756	7.271	.704	2.707	.422	2.874
LANGUAGE PRESCORE	-.051	.459	.709	2.150	.200	4.024	.640	1.612	.549	1.496	.678	2.712	.154	5.256	.729	2.322	.299	2.077
AFFECT PRESCORE	-.072	.377	.445	-1.209	-.092	4.902	.370	1.739	.486	1.823	.414	-5.275	-.246	6.404	.510	1.732	.183	2.531
AV. PUPIL AGE (MONTHS)	86.46	2.83	-.049	.059	.034	.457	.008	.000	.000	.170	-.036	.246	.086	.597	.030	.078	.062	.236
% CLASSROOM MALE	51.57	15.75	.106	-.017	-.053	.067	.006	-.007	-.084	.025	.036	-.126	-.246	.087	.065	-.029	-.127	.035
% CLASSROOM BLACK	50.34	14.58	-.247	.031	.092	.161	-.269	.033	.357	.060	-.176	.332	.598	.211	-.220	.078	.320	.083
% PRESCHOOL (OR NO. MOS.)	5.21	2.55	.098	.178	.092	.436	.124	-.103	-.194	.162	.086	.637	.200	.570	.064	.031	.022	.225
% PARENTS W/O HS DIPL.	70.39	11.95	-.425	-.151	-.364	.140	-.204	.039	.347	.052	-.391	-.303	-.447	.183	-.402	-.037	-.123	.072
% PARENTS W SKILL OCCUP.	32.61	15.29	.288	.054	.167	.086	.130	-.000	-.008	.032	.330	.127	.239	.112	.389	.061	.261	.044
% PARENTS BLACK	52.18	13.62	-.205	-.158	-.434	.172	-.237	-.042	-.422	.064	-.196	-.562	-.945	.225	-.224	-.125	-.476	.089
% PARENTS POVERTY ELIGIBLE	50.10	18.01	-.213	.194	.706	.104	-.115	.008	.100	.038	-.187	.434	.964	.135	-.226	.084	.427	.053
% HEAD HOUSEHOLD EMPLOYED	81.77	10.33	.374	-.025	-.052	.165	.294	-.034	-.260	.062	.366	.078	.099	.216	.401	-.018	-.052	.085
% HEAD HOUSEHOLD MALE	73.17	11.55	.228	.238	.556	.115	.038	.028	.238	.043	.206	.424	.604	.150	.054	.105	.341	.059
SUMMARY STATISTICS																		
MEAN				44.88				9.424				70.42				21.56		
VARIANCE				24.481				1.818				65.633				12.700		
MULTIPLE R				.907				.819				.942				.953		
R^2				.823				.670				.887				.909		
VARIANCE WITH COV'S ELIMINATED				12.477				1.725				21.293				3.326		

TABLE B-17

COHORT II, ENTERING FIRST, REGRESSION ON CONTROL VARIABLES:
PARENT OUTCOMES FOR PROJECT ANALYSES (N = 24, RESIDUAL df = 10)

			PCH				PSH				PEX				SCN			
			REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS				REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.	r_o	RAW	STD	S. E.
COVARIABLE																		
% W/O HS DIPLOMA	75.16	13.396	-.234	-.002	-.102	.009	-.312	-.004	-.101	.014	-.589	-.016	-.437	.010	-.496	-.011	-.388	.010
% W SKILLED OCCUP.	26.20	16.927	.152	-.000	-.023	.007	.390	.010	.394	.011	.435	.003	.102	.008	.386	.005	.225	.008
% EVAL CHILD LANG POSITIVE	71.14	17.851	.283	.007	.435	.008	.168	.004	.135	.012	.661	.015	.567	.008	.237	.001	.035	.009
% BLACK	63.44	14.490	-.044	-.004	-.191	.010	.040	-.004	-.113	.016	.220	.003	.079	.011	.158	-.001	-.030	.012
% REPORTING USE OF PRESCH.	58.12	23.254	.066	-.001	-.101	.005	.312	.004	.206	.008	.296	-.000	-.004	.006	-.272	-.003	-.176	.006
% POVERTY ELIGIBLE	54.01	19.395	-.187	-.001	-.080	.007	.012	.008	.340	.012	-.138	.006	.253	.008	-.202	.001	.025	.008
% HEAD HOUSEHOLD EMPLOYED	78.50	11.522	.100	-.000	-.008	.015	.083	.001	.022	.023	.174	.012	.279	.016	-.174	-.013	-.377	.017
% HEAD HOUSEHOLD MALE	69.02	12.478	.099	-.005	-.246	.013	-.105	.001	.019	.021	.152	-.006	-.168	.014	.175	.011	.346	.015
SUMMARY STATISTICS																		
MEAN				-.000				-.113				.061				-.049		
VARIANCE				.073				.216				.234				.150		
MULTIPLE R				.367				.521				.825				.672		
R^2				.135				.272				.681				.452		
VARIANCE WITH COV'S ELIMINATED				.113				.283				.134				.148		

TABLE B-18

COHORT II, ENTERING FIRST, REGRESSION ON CONTROL VARIABLES: TEACHER OUTCOMES FOR PROJECT ANALYSES (N = 27, RESIDUAL df = 12)

			PARENT EDUCATOR IMAGE REGRESSION COEFFICIENTS				PROFESSIONAL ACCEPTANCE OF FT REGRESSION COEFFICIENTS			
	MEAN	S. D.	r_0	RAW	STD	S. E.	r_0	RAW	STD	S. E.
COVARIABLE										
JOB SATISF. RATING	1.85	.480	.299	.144	.206	.180	.231	.248	.322	.196
BOOK RESOURCE SCALE	3.52	.937	-.040	-.043	-.119	.096	.017	-.069	-.177	.104
RACE (BLACK/NONBLACK)	.593	.296	-.372	-.556	-.490	.361	-.080	.064	.051	.392
IDENT. W. COMMUNITY	.963	.824	-.136	-.062	-.151	.119	.490	.270	.604	.129
NO. HELPERS	1.55	.670	.091	.003	.007	.126	.106	-.038	-.070	.137
ABLE TO CHOOSE ASSIGN.	1.39	.920	-.382	-.051	-.140	.105	.194	.002	.006	.114
TRNG & TEACHER EXPER.	5.14	1.859	.146	.051	.262	.050	.119	.034	.173	.054
SUMMARY STATISTICS										
MEAN				.36				1.74		
VARIANCE				.113				.136		
MULTIPLE R				.605				.616		
R^2				.365				.379		
VARIANCE WITH COV'S ELIMINATED				.113				.134		

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Director: Altharanzo L. Thompson

FOLLOW THROUGH PROGRAM SPONSORS (Concluded)

LANGUAGE DEVELOPMENT (BILINGUAL) EDUCATION APPROACH

Southwest Educational Development
Laboratory (SEDL)
Follow Through Model
800 Brazos Street
Austin, Texas 78701

Director: Preston C. Kronkosky

MATHEMAGNETIC ACTIVITIES PROGRAM

University of Georgia Follow Through
Psychology Department
Athens, Georgia 30601

Director: C. D. Smock

THE NEW SCHOOL APPROACH TO FOLLOW THROUGH

University of North Dakota
Center for Teaching and
Learning
Grand Forks, North Dakota 58201

Director: Vito Perrone

PARENT SUPPORTED APPLICATION OF THE BEHAVIOR ORIENTED PRESCRIPTIVE TEACHING APPROACH

Georgia State University
Department of Early Childhood Education
33 Gilmer Street
Atlanta, Georgia 30303

Director: Walter L. Hodges

RESPONSIVE EDUCATIONAL PROGRAM

Far West Laboratory for Educational
Research and Development
1855 Folsom Street
San Francisco, CA 94103

Director: Denis Thoms

RESPONSIVE ENVIRONMENTS CORPORATION EARLY CHILDHOOD MODEL

Responsive Environments Corporation
200 Sylvan Avenue
Englewood Cliffs, New Jersey 07632

Director: Lorie Caudle

ROLE-TRADE MODEL

Western Behavioral Sciences Institute
1150 Silverado
La Jolla, California 92037

Director: Wayman J. Crow

TUCSON EARLY EDUCATION MODEL

Arizona Center for Early Childhood
Education
1515 E. First Street
University of Arizona
Tucson, Arizona 85719

Director: Joseph M. Fillerup

UNIVERSITY OF OREGON ENGELMANN-BECKER MODEL

University of Oregon
College of Education
Follow Through Project
Eugene, Oregon 97403

Directors: Siegfried Engelmann
Wesley C. Becker